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The social function of higher education in the social models of the European knowledge society

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This report was co-financed by the European Commission’s Socrates Programme (NESOR-project nº 2006-2817/001 SO2 61 OBGE)

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<th>Acronym</th>
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<tr>
<td>ANECA</td>
<td>Spanish Agency for Higher Education</td>
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<td>Ba</td>
<td>Bachelor</td>
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<td>CAP</td>
<td>Centre for Permanent Learning</td>
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<td>CRUE</td>
<td>Conferencia de Rectores de la Universidades Espanola</td>
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<td>ECTS</td>
<td>European Credit Transfer and Accumulation System</td>
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<td>European Credit Transfer System for Vocational Education and Training</td>
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<td>European Higher Education Area</td>
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<td>European Qualification Framework</td>
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0. Introduction
The NESOR project, co-funded by the EU within the Socrates programme, has the objective to outline the role and function of the higher education in the new European social model, which is one of the pillars of the EU-strategy towards the European knowledge society. The project is focused on the social function of the higher education within the emerging European knowledge society. Such a project faced the problem to distinguish clearly between the universities on one side and the higher education on the other side. Universities are not institutions only devoted to education, but also to scientific research. On the other side, universities are not the only higher education institutions. There are other institutions like the poly-technical high schools, which have an increasing relevance in the systems of higher education. That indicates a need to delimitate clearly the field of the study. In the following, we make reference only to higher education in the university and outside of the university. The research activities of the universities are only taking in consideration in its function to support the higher education.

For this reason, we will not go extensively into the discussion of some main aspects of the European knowledge society, as for example the function of the university research for the economic development of the European society or the need to improve the interrelation between the university research and enterprises.

In the first chapter of the report a conceptual framework is outlined based a) on the literature review of the history of modern university and b) on the revision of some social scientist theoretical approaches on the social function of higher education. We don’t pretend to give an exhaustive overview about the history of higher education systems neither about the research on higher education. It pretends to establish a coherent theoretical framework for the research on the social function of higher education in the knowledge society.

The second chapter refers the results of desk research and empirical work (interviews) undertaken on the concept of the knowledge society and the role of higher education in this emerging type of society. We contrast the social science debate with the political strategy of the EU in turn of knowledge society. At a second level, we contrast the EU debate with the insights of the national debate in turn of this concept.

The third chapter is devoted to the role of higher education in the so-called new European social model. Still in the work on knowledge society attention is paid to the issue of the European social model. The modernisation of the European social model stands in the centre of the actual modernisation strategy of the EU. This is the main pillar of the Lisbon strategy to convert the EU in the most competitive knowledge economy. But the political assumption of a European social model is contested by social science research stating different social models within the EU. The welfare regime and the Varieties of Capitalism approaches are example of this social science view on the variety of European social models. Using statistical data from Eurostat and the OECD, the report describes the different learning performance of the countries under
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scrutiny. This analysis is focused on the educational structure of the NESOR-countries and its evolution from 2000 to 2007, the period of the application of the guidelines of the Lisbon declaration. The second focus of the analysis is the status of the higher education in the whole education system taken as reference the higher education gross enrolment rate and participation rate as well as the private and public expenditure in higher education institutes. To complete this analysis, data about the lifelong learning of the NESOR-countries are incorporated. This analysis permits us to classify the insights of the higher education reforms and debates in the NESOR countries with the objective to detect main similarities and differences among them and to formulate some recommendation for higher education policies.

In the last chapter of the report, we make an effort to translate the social science analysis of the social function of higher education in the social models of the European knowledge society in recommendation for future strategies.

At least, one advertisement: The NESOR-consortium has formulated an ambitious research project on the social function of higher education putting emphasis on the educational function of higher education. However, the consortium was conscious that this ambitious research plan could only realised in form of a tentative research. The budget restriction of a project funded by the Socrates-programme allowed only making brush strokes on these issues. But this brush strokes give valuable indicators of the critical points of the actual European and national strategies on higher education towards the knowledge society and underpins the need to discuss in depth the social function of the higher education not only in terms of employability, but also in terms of social equity and of social risks. The intended or unintended generalisation of higher education will change profoundly the system itself, but as a driving force of social-cultural and economical change it will impulse in medium and long term profound changes in the European society, which will go beyond the Lisbon strategy.
1. The social function of higher education

A conceptual framework
to analyse the social function of higher education
in the social models of the European knowledge society
1.1. The constitution of the modern system of higher education

The development of the system of higher education is tightly linked to the development of the science system. This strong linkage is a product of the modernisation process, in which the science and education have been constituted as systems by their own as well. Until the 17th century, education has been generally considered a family affair, “but in the course of the 18th century, increasing attention was paid to school teaching and curricular issues, and to the relation between education and society.” [Vanderstraten, R. 2004: 262]. Parallel, the science system has been constituted as a social system. Both trends have merged in the university as the paradigmatic institution for higher education and science. Modern university is a singular form of institution as it participates symmetrically in two functional systems of the modern society without that one of these functions dominates permanently over time [see Stichweh 2004: 2]. Although the universities are not the only institutions of higher education, they are still the paradigm of this type of institutions.¹ For this reason, we describe the constitution of the modern system of higher education focusing on the universities.

The university is one of the most particular institutions of the modern European society. Its origin goes back to the 12th and 13th century. From then on it contributed to the development and maintenance of the knowledge of the modern society. T. Parsons [1961: 261 and with Platt 1973] sustained that the University is the most important institution of the modern society, which has no precursor in further societies. It is worth noting that at the beginning the 21st century still exist around 60 universities older than 500 years [Kerr 1987: 184]. The universities have a temporary stability only comparable to the institutions in the religious area. This does not refer only to the name but also to some structural components like faculties, chairs, academic lectures as the characteristic form of teaching and the academic self-administration [Stichweh 2001: 2].

The universities do not show only a high temporary stability, but also a local stability. In spite of their linkage to transnational knowledge networks, the universities are first at all local institutions. Stichweh [2001: 2] call the attention to this phenomenon in comparison to multinational organisations, which are another typical institution of the modernity. The universities are rooted in their local environment although there aren’t economic or juridical obstacles for their geographical expansion.

This temporary and local stability does not imply that the universities have not experimented structural reforms. The university of the 17th century is very different to the university of the 20th

¹ The creation of other types of higher education institutes can be seen as a differentiation process within the higher education system.
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The first European universities have been founded in the 12th century under the guide of the catholic church as teaching institution “… employing regular teaching staff, offering specific courses of higher studies … and granting certificates of accomplishment in the form of general recognized diplomas or degrees.” [Rudy 1984: 14]. In its origin the universities acted in the fields of theology, law and medicine preparing an elite for educational, ecclesiastical, governmental and professional careers. The 15th century witnessed a period of creation of numerous new universities, funded ex-novo by the Imperator, kings and dukes overall in north and central Europe. The model followed by these new universities has been the Parisian university and integrated usually four faculties: arts, theology, law and medicine [see Geuna 1996: 19 and Verger 1992]. In contrast to other education and training institutions, the universities were characterised by:

“a) its organisational status guild-like;
b) its special right to aware master and doctoral degrees recognized everywhere in the Christendom, the jus ubique docendi;
c) its ability to attract students and masters form regions (countries) other than the one of its geographical location; and
d) its multidisciplinary features.” [Geuna 1995: 19]

The universities formed a kind of cosmopolitan network going beyond the territorial boundaries of the political units (kingdoms, dukedoms etc.) but embedded in the Christian culture. They formed a kind of European “intellectual unity devoted to the cultivation of knowledge, enjoying a certain degree of independency from the papacy, the empire and the municipal authority.” [Geuna 1995: 22]

In its origin, the universities were self-funded, but their growth rested their financial autonomy in the course of time depending more and more on the external funds provided by kings, dukes and towns to pay the teachers as well as the maintenance of their buildings. In compensation,
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the external funders get more and more involved in the control and management of the universities.

In consequence, the universities acquired in the last medieval period more and more local character depending even more on the local authorities playing a role in the consolidation of the respective political units and later playing an important role in constitution of the nation-states. Parallel, due to their intellectual conservatisms aligned to the church, the universities lost relevance in the cultural and political modernisation of the European society in the period of the Enlightenment. The universities “still retained narrow and antiquated curriculum and methodologies, made few contributions to thought, and opposed the ideologies spawned by the Enlightenment” [Rudy 1984: 87]. As institution, the universities didn’t form part of the intellectual and cultural revolutions in the 17th century and 18th century. This favoured the emergence of alternative institution as the academies of science and scientific societies.

In the 16th and 17th century, science was organised even more in academies. These had generally their origins in the informal communication circles of scientists created around new scientific research programmes framed in the scientific revolution of this time. In the course of the 17th and 18th century, the academies of science became even more institutions under the order of the absolute mercantile state to control and promote science. But the political role of the academies of science was diffuse as a) they expressed the societal interest to promote scientific research in turn on research programmes, b) they should contribute to resolve technical-commercial problems or evaluate the solutions (for instance: patent systems); and c) they should be the place to represent science as part of the cultural legitimization of the estate authority [Stichweh 1981: 3]. The academies of sciences haven’t had the capacity and the organisational structure to support the expansion of the scientific research in form of continuous research programmes and, at least, the differentiation of science into a social system by its own [Stichweh 1981: 4]. This deficiency conduced to take another institutional configuration through the integration of higher education and scientific research in the university.

The industrial revolution implies not only a technological progress and productivity growth, but also the liberation of a dynamic of economic development, which refused the permanent intervention of the state. In this sense, the economy became depoliticized. On the other hand, this depolitization allowed the state to develop scientific programmes without taking into account their economic-commercial perspective.

The dynamic of the economic development and the level achieved in the area of production technologies still at the beginning of the industrialisation uncoupled scientific and technological

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2 Stichweh (1981: 3) mentioned that the British Royal Society as an exception for the specific advanced societal environment in Great Britain, where the state didn’t need science for legitimization as it based it legitimization on its “glorious revolution” and the dynamic of its economy.
development. The progress of the basic production technologies has been developed within the economic system itself [see Stichweh 1981]. The differentiation of economy allowed the differentiation between technology and science contributing so to the creation and stabilisation of science as an autonomous social area.

The creation of science as a social system required another institutional form as the academies of sciences. To support this trend, science came back to the tradition of the university. The differentiation between technology and science allowed also the internal differentiation of science in disciplines and sub-disciplines from the beginning of the 19th century on. This brief reference to the changes at the end of the 18th century is only one example of the changes in the articulation between the science and other social subsystems in the course of time. It underpins that the universities have become a new role in the society in the course of the 18th and 19th century structuring the science system.

This brief overview of the history of universities before the 19th century shows two characteristics of the past universities:

a) The pre-modern universities are focused on teaching and forming an elite for specific areas, overall theology, law and medicine. Research didn’t play an important role in the pre-modern universities giving place to the incipient establishment of alternative forms to organize science.

b) The pre-modern university, as institution, wasn’t an active actor in the social and cultural innovation processes. On the contrary, they played a conservative role aligned with the church.

The modern university is a phenomenon of the 19th century. Wittrock distinguished three periods of transitions starting from the period of crisis and rebirth of the university at the end of the 18th and at the beginning of the 19th century. This was followed by the creation of the modern research-oriented university and “third, the current period of reappraisal in the wake of the experiences of a less than all-successful planning euphoria on the one hand and rapidly growing stream of demand – and often enough also support – from government, industry, and the educational system at large” [Wittrock 1993: 309]. As Stichweh underpinned, the transformation of the universities is tightly related to the differentiation of science as a system by its own. In spite of the competing institutional forms of science, university has become the most prominent science institution in the industrialized society. They were established as the primary institution of (scientific) knowledge production delegating the technological development to the enterprises (or the economic system). In the course of the 19th century the

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3 This differentiation process between science and technologies has it expression in the figure of the engineer and it relevance in the industrialisation process.
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idea of the research oriented universities – taking as model the German university and more in concrete the University of Berlin.

The universities were created under the primacy of the Catholic Church. But in the course of the history and previous to the modernity, the state obtained the primacy in the system-environment relation of the universities and the education. This strengthened the political function of the universities in detriment of the religious function. In modernisation process gained terrain the political perspective that education has besides a political also an economic function giving impulse for the differentiation of education as a social system. The result is an ambivalence of the policy in respect to education opening the way to the internal regulation how to treat the population to be educated. [Stichweh 1991: 81]. In the pre-modern European society, the objectives of education were taken unmodified from outside of education. In the transition to the modern society, the objectives of education became even more an internal educational affair, so that the population to be educated are perceived under educational criteria and as modifiable through the system internal people processing.

In spite of the primate of policy on education, the politic system couldn’t impede the increasing autonomy of the educational system. The process of differentiation of the occidental society in social systems obliged the political system to be focused on the design of its relation to the other social systems. For this reason, it couldn’t outline how the differentiated educational system must act with other social systems. In the degree that the political system discovers the new reality of differentiated social systems and that also the education as a system has a differentiated environment, it must accept the autonomy of education to decide how to handle the population to be educated based on educational principles [see Stichweh 1991: 81].

However, the example of the German universities in the 19th century shows the high influence of the political environment on the university development not only in the research area but also in the education area. As Wittrock underlines, one of the key elements of the German model of university established at the beginning of the industrial society was Bildung, which isn’t well translated as education. The ideal of Bildung behind Humboldt’s university model was the forming of the personality of the human being as a whole and its development of reasoning. The universities should educate the student to competent, self-conscious and independent citizens combining objective science with subjective education and self-forming. In this ideal, the general education has a high relevance as the basis of the whole development of the human being. The general education, not only in the primary and secondary education, but also at the
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universities, is considered the fundament of the more specific education or training for a profession.4

Humboldt saw the university as part of a whole education system to promote this broad humanist ideal of Bildung. In correspondence, his university model starts from the assumption of the totality of science. But the increasing specialisation of science and its differentiation in disciplines and sub-disciplines undermines this ideal. The teacher/researchers at the universities were not longer “masters able to teach all the required subjects, but specialised, single discipline professors focused on the advancement and transmission of a specific, well defined portion of knowledge” [Wittrock 1993:320]. The application of the principles of scientific disciplines and sub-disciplines to organise universities induce a more specific education at the universities focused on the training of professionals [Ellwein 1997: 127]. The professionalization not only of scientist but overall of engineers and civil servants has been one of the most relevant contribution of higher education to the modernisation of societies.5

In parallel, this education ideal of the enlightenment lost relevance in the course of the 19th century with the establishment of the authoritarian nation-state. For instance, the newly created nation-state under the Prussian leadership implies a retreatment in the autonomy of education and science and a higher degree of state control. In the course of the 19th century, (higher) education becomes even more a subject of the state administration as the creation of ministries of education shows. The state administration decided about the destiny and configuration of the whole systems of higher education. It regulated the access to the universities, the curricula and the examinations. And it supported the universities financially and provided it with modern buildings and laboratories [see Rüegg, W. 1999].

But in the modern history of the European university didn’t exist only the Humboldtian or the German model. Rüegg [2004] underlines the existence of an alternative at the beginning of the 19th century: the Napoleonic model.6 The French model starts from the tabula rasa of the French revolution, in which the Convention abolished Faculties and university cooperation’s and “replaced with specialised, more professional oriented schools” [Musselin 2004:10]. These schools were the ancestors of the French Grandes Ecoles created later during the Napoleonic

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4 “Fängt man aber von dem besonderen Berufe an. So macht man (den Menschen) einseitig und er erlangt nie die Geschicklichkeit und Freiheit, die notwendig ist, um auch in seinem Berufe allein nicht bloß mechanisch, was Andere vor ihm getan, nachzuvzahlen, sondern selbst Erweiterungen und Verbesserungen vorzunehmen. Der Mensch verliert dadurch an Kraft und Selbständigkeit …” (Humboldt 1809 cited by Ellwein, T. [1997: 116]

5 In many countries, however, the training of engineers was tasks of polytechnic schools and not of the universities.

6 In the course of the modern history emerged also the British model, which, however, cannot be considered at the beginning of the 19th century as a model. Charle sustained that the British universities can be considered a model only in a very broad sense of the term as it wasn’t the result of political decisions but as a compromise between historical traditions and necessary partial reforms. [Charle 2004: 59]
Empire. These institutions have been instead of the universities the main place of the forming of the French elite marginalising the universities [Belloc 2005].

Napoleon introduced in 1806 the Imperial Université based on “minimalist, strictly utilitarian concept, one that would sterilize higher education and produce a national, centralized system” [Musselin 2004: 10] restoring the faculties. Napoleon didn’t restore the universities but created a new system for elite education under the name of université keeping at the same time the Grandes Ecoles. The basic breaks of this system were the faculties as the transmitter of “single-discipline structures that had no relations with each others except if they belonged to the same family or order or discipline” [Musselin 2004: 1]. In spite of that in 1896 the faculties were authorized to create universities - giving place to the creation of the University of Paris, of Toulouse, of Montpellier etc - the four traditional faculties letters, science, laws and medicine has been for more than 160 years (until 1968) separated entities, which didn’t formed universities as they were known in other countries. The disciplines are characterised by its “own career management modes and the control centralised in Paris” [Musselin 2004].

The Napoleonic regime introduce a strong state control of higher education converting the Grandes Ecoles in institutions focused exclusively in the education and training of higher civil servants and officers for the French army as well as scientific based professions under state control as lawyers, medicals and engineers. The French université was put under the formal control of the “Grand Maître de l’Université”. Belloc [2005] pointed out that this was largely a symbolic position, but symbolising the low autonomy of the faculties. This state control of higher education institutes was completed by the supervision of the Grandes Ecoles by different Ministries. Also the curricula and the study programmes are regulated in details, the development of the education was controlled under political and religious criteria and the teachers and students were submitted under a strict discipline [see Rüegg p.18]. This post-revolutionary higher education system was designed to fulfil three main objectives:

a) To provide the post-revolutionary state with civil servants and liberal professionals, which are necessary for the political and social stability of Napoleonic and post-Napoleonic state.

b) To control the elite education and training according to the principles of the new social order.

c) To avoid the emergency of ideological, political and spiritual tendency putting in question the new state.

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7 For instance, Charle [1994] is talking about the “impossible French university”.

8 To underline this situation of the estate control, Belloc [2005] pointed out that “Napoléon created the Imperial University and not the imperial universities.”
The Imperial University created a dynamic of compartmentalisation of the whole education system within a highly hierarchised and centralised system. A central actor in this process has been the Conseil de l’Instruction, which takes quickly the prerogative of the Grand Maitre to managing the academic system. “Each member of the Conseil administered the education system in the discipline he represented, managing careers, presiding over agrégation juries and study programs, finances, the creation of chairs, and so forth” [Musselin 2004: 12]. In other words, the disciplines were the central instance organising science and higher education. “University organisation, completely without autonomy, was merely the faithful reflection of the profession” [Musselin 2004: 12].

The reform of French universities of 1896 didn’t reinforce the universities but the faculties. The 15 created universities were mere collections of faculties with a powerless university council and a president named by the government. This implies, that the disciplines continued to manage the academic careers. In the 20th century, the state intervention in the career management became less important reinforcing the role of the academics. Strengthening the faculties instead of the university as organisation has had the consequence that the central actors became the faculty deans instead of the universities’ rector. This is reinforced by the fact that the state steered the universities through the faculties. “In sum, state steering modes, academic career management, and university ‘government’ all reinforced each others, thereby creating a university system dominated by vertical disciplinary logic, a system in which universities had no real place” [Musselin 2004: 23]. The system of higher education was also characterised through the dominant position of the grandes écoles, which continued controlling the access to technical and administrative careers. The universities struggled with the Grandes Ecole on the role in the higher education system (and with renewed research institutes on the role in the research system). The reforms of the French higher education system in the 19th century didn’t strengthen the universities in front of the grandes écoles. On the contrary, in the course of the century, the grandes écoles became even more dominant maintaining most of their privileges [Charle and Verger 1994; Charle 1997; Gaillard 1998].

Precisely at that time when Napoleon reformed the French higher education system based on the principle of hierarchised and centralised state control and oriented on the education and training of elites at the service of the state, in Germany emerged the new university model becoming the guiding vision for the development of other national university systems. This new model of research-oriented university promotes the structuring of knowledge into disciplines but within one coherent organisation form. This model was quiet different to the Humboldt’s ideal of a university, in spite of sharing the fundamental assumption to combine teaching and research in one institution. Humboldt’s university “would be an institution for the cultivation of excellence, which is free in the internal realm of research, privileged by the state and the law, discharged in
relation to the normal state affair in the broader society” based on a community of teachers/researchers and students “devoted to science as such for its own sake, within the proper domain of an autonomous realm of knowledge organised according to the principles of free-self-formation” [Spinner 1993: 142]. Humboldt as many other German thinkers as that time follows a “holistic thinking in broad historical cultural categories and informed by a type of philosophy which rejected narrow-minded specialisation” [Wittrock 1993: 315], which ironically were incompatible with the strong division of science in disciplines and sub-disciplines as imposed in the European university system in the course of the 19th century through the creation of the research-oriented university. The creation of this new university type is tightly related to socio-political developments in this time period. “It is only too obvious that this institutional process is intimately linked to another one, namely the rise of the modern nation-state whether in newly formed polities on the European continent, such as Italy or Germany, or through the reform of older State organisation, such as France or the United States of America” [Wittrock 1993: 305] The modern universities aren’t the kind of cosmopolitan institutes like before and not only a source of knowledge, but they played an important role to strengthen the national cultural identities and to contribute to the strengthening of the national state. Through the education and forming of public servants, it reinforced the process of bureaucratization. The universities also contribute to the consolidation of the bourgeoisie as the dominant social class.

Resuming this brief description of the history of the university until the end of the 19th century, there exist consent that the universities, as the main institutes of higher education and research, have played a main rule in the processes of modernization supporting the nation building process and the consolidation of the bourgeoisie in this process. It was a catalyst of the professionalization of science contributing so to the establishment of the modern science system. The success of the German model of the research-oriented university in this period is related to his advancement in the professionalization and bureaucratic regulation of science [see Rüegg 2004].

The invention of the research-oriented university taking a leading role in the development of the science system has had consequences for the internal structure and processes of higher education. The universities are structured according to the internal differentiation of the science system in disciplines and sub-disciplines. This implies also a change from the objective to provide a general higher education plus a professional training favouring the focus on the professionalization of the students.

But it must be also underlined that the institution university hasn’t played, until the 19th century, a role neither in the process of social innovation neither in the scientific or technological revolutions. On the contrary, as institution it has maintained a conservative position aligned to
the church. In the late 18th century and at the beginning of the 19th century, the role of the universities changed taking a leading role in the consolidation of the bourgeoisie as dominant class in the industrial society playing a crucial role in the nation-state building process. In the middle of the 19th century, which is generally characterised by the high social consideration of science, the scientific inventions and discoveries are even more seen as the expression of the national characters. In so far, science forms part of the competition between the nation states. For instance, the German victory over the French army in the war of 1870/71 was linked to the supremacy of the German university system. Scientific education is widely considered as a factor of the welfare of the nations and their international prestige. However, once consolidated the nation-stat, the position of the “Bildungsbürgertum” and the science system, the university became again conservative defending the status quo of the society and the university system.

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<th>Social functions:</th>
<th>Middle Ages</th>
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<tr>
<td>Educate students (’Bildung’ &amp; transfer of traditions)</td>
<td>x</td>
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<tr>
<td>Produce experts &amp; professionals for society</td>
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<td>x</td>
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<tr>
<td>Nation-building &amp; welfare state</td>
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<td>x</td>
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<tr>
<td>Promote economic growth &amp; development (innovations)</td>
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<td>Serve academic communities &amp; cultivate traditions</td>
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Table 1: Social Functions of the universities


Looking at the history of the European university, it seems doubtful to assign it an intended function of innovator. The universities, as institution haven’t take active part in the main scientific, cultural, political and economic innovations\(^9\) in the European society.\(^10\) The cultural innovation of the renaissance, the scientific revolution of the 17th century, the first industrial revolution and probably also the second industrial revolution based on telecommunication and computing were initiated outside of the universities [see H.H. Chartrand 2007:1]. But, the universities have put the ground for these innovations through their contribution to the scientific

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\(^9\) Here we are talking about innovation in the sense of rupture innovations and not of incremental innovations. There is no doubt that the university has contributed to the scientific progress through incremental scientific innovations.

\(^10\) “The progress of industry in its early years rested on empirical inventions and practiced technology rather than scientific theory, and as long as industry was dominated by individual entrepreneurs and family firms there was little demand for trained scientist or technical Experts. University simply seemed irrelevant to industry or commerce, and if there were demand for new forms of education they could be satisfied in other and cheaper ways.” Gordon Graham (2003: 25)
progress, but overall through the expansion of higher education and the professionalization of science (and in minor degree of technologies, as this was the specific affair of polytechnic high schools).

The role of the universities, the academic staff and the students in the course of the two world wars shows also the more conservative role of this institution ones established the civic industrial society. The First World War showed that the apparently international science community was impregnated by patriotic convictions. The great majority of the scientists in all countries have defended the cause of their nation state in front of the enemies. And in the period after the war, the German case is an example of conservative character of the academic staff. Many professors idealised the German Imperia as the “dorado” of the scientific liberty and progress perceiving the Weimarer Republic as an undesired political system [see Hammerstein 2004] opting later for the cooperation with the fascist regime.

This isn’t the place to discuss in depth the role of the university in the world war periods, but our brief exposition indicates the conservative character of the institution to maintain the status quo in the society defending the interest of the “Bildungsbürgertum” once established the nation-state. In so far, the university has fulfilled the function of “social innovator” only in one concrete moment of the history contributing to the creation of the nation states and the professionalisation of the modern state administration and the science system. Once established the (authorian) nation state with a dominant bourgeoisie class and the science system, the universities and its members became more conservative focused on the maintenance of their status. But the evolution of the higher education from the beginning of the 19th century on, characterised by its constant expansion, has a social innovation impact on the European societies in the course of the last two centuries.

1.2. The social function of higher education

In the post-war period, education has become again a primary political issue in the 1960’s. For instance, in Germany starts a political discussion about the perceived education gap in respect to other industrialized countries (especially to the USA) and the possible negative economic consequences in the future. On the other side, Dahrendorf [1965] claimed for education as a citizen right. He argued in favour to the expansion of education as a factor to profound the democracy and social equity. But at the 1970’s, some voices came up considering that the

11 In Germany, Picht (1964) argued for a strategy to reinforce the education policies from the perspective of the human capital theory: “Der bisherige wirtschaftliche Aufschwung wird ein rasches Ende nehmen, wenn uns die qualifizierten Nachwuchskräfte fehlen, ohne die im technischen Zeitalter kein Produktionssystem etwas leisten kann.” (Picht 1964: 17)
The expansion of education has gone too far producing negative effects as for instance overqualification (more academic workforces as the labour market can absorb) [see Teichler 1987], the inflation of educational certification [see Beck 1986 and Geissler 1978: 482] (education certification are not longer the selection criteria to access to better work places), the reduction of the income difference between the differently qualified groups of employees and a reduction of the benefits of education, the stronger discrimination of low-qualified and high-qualified workforces in the labour markets. Still these few indications show the long tradition of the debate on the social function of higher education in Europe.

The NESOR-project is focused on the social function of higher education in the European knowledge society. In the 1970’s, Parsons & Platt discussed the social function of higher education under the systemic perspective in a broad way. They highlight the importance of higher education for the modernisation process of the US-American society. On the other hand, recent discussion put the attention to the equity and social justice within higher education [see Brennan & Naidoo 2008: 287]. Zajida et al. [2006: 13] addressed this issue under the question, how higher education can “contribute to the creation of amore equitable, respectful, and just society for everyone?” This is still a very broad field to be cover and requires in face of a research project concretisation.
The main functions of education are from the internal perspective the forming of persons (socialisation), and from the external perspective the selection. Selection means to assignment of position based on economic, political and social criteria. Education via education and training credentials is perceived in the modern society as one of the main tools to assign positions in the economic system and the society. The expectation form the economic system and the society must be translated into the socialisation processes of education system designing the titles, curricula, study programmes, etc.

Under this perspective, we propose to analyse higher education under three aspects, which are relevant for the analysis of the function of the higher education in the European social model especially focused on new social risks. We put two external aspects in the foreground [see Teichler 2003: 15]:

- Education has a qualifying function transmitting competences, which are relevant for the labour market and/or for other social areas. That means education provides competences contributing to the successful realisation of tasks in the professional life and in other life areas. This perspective will be handled under the header of linkage between higher education and the economic system.

- Education has a function to distribute social status [Boudon 1974; Sewell, Hauser & Feathermann 1976, Teichler, Hartung & Nuthmann 1980; Husén 1987] in the sense that the achieved and certified educational level has considerable influence in opportunities of the individuals to access to material and immaterial resources, influence and prestige. The obtained education certification influenced the access to resources (material resources, influence and social prestige) providing new life-course opportunities. This perspective will be covered under the header of higher education and the society asking how higher education contributes to the social stratification and how it reacts to political objectives to promote vertical social mobility. At least, we will discuss briefly the function of higher education to improve competences for other social areas connecting to the Parsons argumentation of the cultural function of universities.

At least, we will cover a third internal aspect:

- Analysing the higher education from the internal systemic point of view. That means, how the higher education system has react on external challenges.

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12 See Brennan & Naidoo (2008: 288): “Classical sociology accorded two main principal functions to education: selection and socialisation.” Selection is also an internal function of the education system creation so educational trajectories or pathways between educational subsystems as primary school, secondary school, vocational education & training, higher education and adult education.
1.2.1. Higher education and economic system

In the actual but also in the historical discussion on the relation between higher education system and economy, two foci must be clearly distinguished, which, however, are often discussed simultaneously:

- Linkage of the university research and economic system
- Linkage of the higher education and economic system

In spite of the focus of our project on higher education in the strict sense of the term, we will refer briefly to the first focus.

1.2.1.1 University research and economic system

The actual debate of the role of universities in the society is strongly influenced by the different approaches analysing changes in the scientific production systems as for example the triple helix and the Mode-1/ Mode-2-model. All these approaches stated a change in the interrelation between the actors (political decision makers, enterprises, public research institutes and universities) towards a more intense cooperation. This changes caused also a transformation of the scientific research model by itself pronouncing more the practical aspects of scientific research and their economic benefits.

The universities as research and higher education has a double function providing innovations and scientific progress: a) in the research area providing new evidences and b) in the area of education facilitating specific knowledge, abilities and skills as the basis of the socio-economic development of the societies.

However, Chartrand stated that “one of the ironies of history is that the three major knowledge or epistemological revolutions of modern Western Civilisation occurred in spite of or nor because of the University. Thus the Renaissance of the 15th Century was the product of Artists & Humanists working outside its walls, not Scholars under its towers. Similarly the Scientific Revolution of the 17th century, or more precisely innovation of the instrumental experimental scientific method, occurred outside not inside its cloistered halls. To add salt to wound, the Industrial Revolution of the 19th century was also an epistemological revolution. It was not however a revolution of the mind per se but rather of the doing. It tooled knowledge into matter/energy as function effectively granting humanity dominion over the planet. This applied revolution was also initiated by dissenters who could not attend the University” [H.H. Chartrand 2007:1]. We can add that the so-called second industrial revolution of the TIC’s is also generated outside of the universities as the example of the personal computers, but also of the
The social function of higher education in the social models of the European knowledge society

Internet as a military research project shows. Computing as been recognized in many countries as an academic area after starting the computing revolution.  

The history of the scientific and industrial revolutions puts in doubt that the main role of the universities in the socio-economic development of the modern societies lies historically in its practical research or in the relation between university research and enterprise research. On the contrary, the increasing role of the universities has something to do with its function as divulgator of scientific rationality through higher education. However, the mainstream of the debate on the role of science in the economic development perceived a change in the relation between science and economy. The thesis of the mode 2 of scientific knowledge production and the approach of the triple helix analysed a closer relation between science and economic activities changing the institutional configuration of science, but also the science processes itself.

This conception of the relation between science and innovation has received critics. The mode 2 and triple helix approach are considered as normative and empirically weak based. Weingart [1997: 4 and 21] argued that the mode 2 of scientific knowledge production only describes the development in specific scientific areas and cannot be generalised to the whole science system. On the other side, the political strategy to strengthen the interrelation between research and economy is based on a linear model “where pure science (today called knowledge) leads to economic success” [Pestre 2007: 5], where innovation leads automatically to economic growth [Felt 2007: 21]. The political concept of the knowledge economy assumes that economic development starts with science and research, which is then translated to technology in form of innovative products or innovation production methods. This seems the basis of socio-economic success in the globalised knowledge economy. “This ‘linear representation’, which informs today’s (quasi) universal stress in policy circles on ‘the need to invest in knowledge’, is false. It is false in macroeconomic terms and in the way companies now conceive their innovative products.” [Pestre 2007: 8] This doesn’t means that there is no relation between science, innovation and economic growth, but the social reality is more complex as the simplifying political labels and “innovation is not automatically motor of such growth” [Felt 2007: 21]. On the other hand it neglects other forms of knowledge and established a knowledge hierarchy. It

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13 In response to the rapid industrial activities in the 1960’s related to the development and use of computers and the growing need of data processing specialists a lack of formal education was detected. “In the Bundesrepublik, much as in the U.S.A. and other European countries, a solution to these problems was seen in the academic qualification of data processing specialists. The rapidly growing field of data and information processing was to be supplemented by an academic discipline. The first computer-related courses were developed around 1960 in the U.S.A. Three different lines emerged: Computer Engineering, Computer Science and Information Science. The first curriculum in information science seems to have been established in 1963 at the Georgia Tech (Institute of Technology). In 1965 the name computer science was generally accepted and in 1968 the first ACM Curriculum for Computer Science was printed.” [Coy, W. (1997] In Germany, it was the University of Karlsruhe, which firstly offered in 1960/70 the career of graduate computing science (Diplom-Informatiker).
suggests also a certain automatism in the technological progress. “Because of international competition and globalisation, it is as if the nature of innovation had not to be discussed, as if ‘progress’ remained, more than ever, the ultimate solutions to all problems” [Pestre 2007: 5]. Criticising the simplicity of the political model of innovation processes, the reducing of knowledge to scientific knowledge and the instrumentalisation of science14 doesn’t imply to defend the ivory tower model of science. The science system must respond to the challenges in its environment.

Stichweh pointed out that the constitution of the modern university was accompanied by the differentiation of science as an own system. This was accompanied by the systemic “outsourcing” of technology to the economic system. Both systems: science and economy have their own codes and their own logics. In this sense, the economic use of scientific developments requires always translation efforts and is in so far time consuming. In the Netherlands, the problem to translate scientific developments in technological development is discussed under the term “paradox of innovation”. But this isn’t only a problem of the Netherlands. In all other countries, including the United States, this problem is discussed. In the background sounds the problem, that technological innovation are rarely mere technological. In the mist of the case, the “so-called technological innovations are really socio-technical innovations, because organisational competencies, business-to-business linkages, and value chains and industry structures more broadly have to be renewed as well” [Felt 2007: 21].

The NESOR-project doesn’t focus on the problem to link science and economy, but it sustains that higher education in the strict sense can contribute to mitigate this “translation problem” and can put the ground for the improvement of social innovation capacity.

1.2.1.2 Higher education and economy: labour markets

The second and for our project more relevant aspect of the relation between higher education and economy refers to labour market and the influence of higher education on the professional structure, but also the changing structure of the labour markets on higher education. The Lisbon Strategy and the political concept of the knowledge economy assume positive relations between economic development and education & training in general and especially higher education. Yet the concept of the post-industrial society put the theoretical knowledge in the centre of the new type of society. Also the Lisbon Strategy and its inherent social model, attribute to the higher education - in the wider sense of the term - a function for the economic development and the creation of more and better jobs.

14 “The instrumental vision of science’s meaning and rationale goes back to its origins in the 17th century Europe.” (Felt 2007: 14).
The Lisbon Strategy is focused on better policies for the information society and R&D; modernising the European social model and the application of an appropriate policy mix. Higher education has crucial position a) for the orientation of the policy to improve the R&D strategies and b) for the focus on the improvement of the education level of the European citizens. The Lisbon goal increasing the participation rate to 50% in higher education was widely accepted. It was accepted that the demand of graduates would increase at various higher education levels. In so far, the three-cycle model of the Bologna process (bachelor – master – PhD) is thought to give labour market relevance to each of these cycles.

In 2005, the strategic document “A new start for the Lisbon Strategy” renewed Lisbon strategy and confirms the objective to increase and improve the investment in R+D, which supposed not only a growth in financial investment but also in a growing labour market for R+D workers. This is accompanied by the policy to “increase investment in human capital through better education and skills” for the dynamic knowledge society promoting a continued investment in highly skilled and adaptable workforce.\textsuperscript{15} In the document “Mobilising the brain power of Europe” [Commission 2005a] the human resources are considered as “core determinant of quality in higher education and research.” To attract talents, the higher education and the R+D must offer a favourable professional environment. In the core of the actual EU-policies stand the R+D and the high skill profile of the EU-countries as one of the strong competitiveness factor. The Lisbon strategy assumed that the reinforcement of the R+D and the innovation capacity would provide more and better jobs.

However, studies on the graduate employment indicated that also these labour markets are submitted under the pressure of flexibilisation and segmented in high quality jobs and low quality jobs. In general it is stated, that in the last decades have increased the flexibility of the EU-labour markets accompanied by a de-standardisation of the labour relations in terms of part-time work, temporary work contracts, flexible working hours etc. In turn around 2005, emerged critical voices stating a low level of achievement of the Lisbon objectives in terms of employment in spite of the progress achieved bringing more EU-citizens in employment. This makes reference to the quantity of achieved new jobs, but overall to their quality. The relation between the changes in the labour market towards a higher instability of labour relations and the changes in the social-cultural live of the EU-citizens became an even more issue in the political and social-scientific debate. It is perceived that many of the new jobs being created even in the graduate labour market segments are so-called ‘bad jobs’. Temporary work, longer working

\textsuperscript{15} “Investment in human capital is also necessary because highly skilled people are the ones who are best equipped to work with the most productive capital and to implement organisational changes appropriate for the new technologies. An increase by one year in the average education level of the labour force might add as much as 0.3 to 0.5 percentage points to the annual EU GDP growth rate” (New Start: 30)
hours and more ‘unsocial’ working hours are perceived even more as normal labour conditions than atypical.

In this context, the social collective of the higher education graduate plays an important role to validate the Lisbon strategy. If the individual and social efforts to invert in higher education bring not the expected results in terms of quality of work and live, a signal is given questioning not only the principles of the Lisbon strategy, but also of the political institution European Union. But it seems not the best signal that a report of a European project realised in 5 EU member states stated that the European higher education institutes as one of the main contractors of graduate workers has been also one of the main focus of the flexibilisation of the labour conditions of graduate workers [Baumgartl & Mariani 2008].

The Lisbon strategy put emphasis on the promotion of a new European social model based on the principal of activation in the social policies. Education and training gain importance as part of the social policies improving the employability of the work forces under risks of exclusion. Under this perspective, also higher education is conceived as an instrument to improve the employability. In coherence to this political approach, a nearer linkage between higher education supply and labour market demands of qualification is claimed. This aspect is also discussed in turn of the Bologna process as the main political strategy to reform the European higher education systems. However, Teichler [2008] observed imperfection and uncertainties, which impedes the tight relation between labour market and (higher) education:

– **Imperfections in identifying job requirements:** Neither responsibles of enterprises are certain to explain, which requirements are related to work places nor who are the persons to complain best the work tasks. Also it is highly complicate to establish scientifically based on observations of professional activities and interviews, which are the qualification requirements, which are the corresponding qualifications and which are the most adequate contents and learning processes to acquire these qualifications.

– **Occupational dynamics:** The tasks in given occupations and professions are changing constantly. And the workers must take into account that they must change in the course of their professional life the employer and/or the profession. This induced a) the question if it is not more adequate to orientate the initial vocational education and training to a bundle of working tasks and b) to emphasis on the need of continuous training in the course of the professional life: lifelong learning.

– **Indeterminate work tasks for highly-qualified work force:** “The higher the educational level required for a certain occupational area and thus the higher the investments for education for the learners or for the society, the more difficult it is to identify the competencies needed, for the relationships between knowledge and job tasks are too complex to be validly analysed.
Moreover, the individual is not expected merely to take over anticipated tasks but also to question the existing rules, to contribute to innovation, and to cope with indeterminate work tasks [Teichler 2008].

- **Deficits in the prognosis and planning**: The perception of new job requirements has always a delay in respect to their emergence in the world of work. And the translation into education and training programmes shows still a higher unavoidable time-gap. Probably the continuous education and training subsystems, due to their lower degree of formalisation, can react faster, but the initial education and training systems (VET and HE) need more time to adapt curricula and teaching processes and implement them. This is a highly complex and time consuming system, which must be based on a constant prognosis and detection of new job requirements, but which in any case is uncertain.

- **Generalists’ versus specialists’ paradigms**: the debate in turn around of the relation between general education and special education can be found still in the origins of Humboldt model of university and has been conceptualised also by Parson & Platt. A similar debate could be found in the more specific area of professionalization, in which the debate of the relation between a more general professional education and a specialising professional education is one of the most durable one. In the context of the globalised knowledge society and its constant changes, this debate gains again relevance asking if the initial higher education must provide a more general professional education, which prepared the students for the constant changes in their future professional life. The other argument focuses on the need of a high professional specialisation in a society based on a high division of labour and highly complex working tasks. The concept of lifelong learning seems advocating more for a general initial education and a specialisation in the course of the professional life depending on the concrete requirements in the labour markets putting more emphasis on the continuing then the pre-career education. Also the Bologna process as it is designed in different national states seems to design the higher education curricula in the sense of a more general education in the first cycle and a specialisation in the second and third cycles. However, the configuration of the relation between general and specialised, as well as pre-career and continuing education “is linked to divergent views, among others, on the change of learning abilities over the life-course, on job requirements in different stages of the career, and on the economic and social conditions for lifelong learning” [Teichler 2008: 22].

Similar to the relation between science research and economic system, the imperfections and uncertainties mentioned by Teichler are a) communication problems within the systems and b) translation problems from one system to another. The changing expectation of the economic system requires communication in the economic system itself. Then the education system must perceive this expectation translating it in the own communication code so that the educational
programme can be modified. This communication and translation processes become even more complex as the political system acts often as a broker between economic and education system. This requires additional translation efforts.

Since the beginning of the 20th century, the relation between higher education and labour market is characterised by periods of unbalance between supply and demand of higher qualified work force. So for instance, in the economic crisis of the 1920’s, in western European countries as Germany or France exist a high unemployment between academic qualified work forces. In the 1960’s an insufficient offer of high and higher qualified work forces is perceived to sustain the positive economic development experienced in this period. But in the 1980’s and still at the beginning of the 1990’s, the European political decision makers observed a too high offer of academic qualified work forces [see Windolf 1997; but also Windolf, P. 1990].

The integration of more students in the higher education system caused an internal differentiation of the system and new forms of coupling to other social systems as the economic system (labour market). This affects not only the structure of the higher education system but also its orientation. It changed from a non-utilitarian education to a utilitarian education focused on professionalisation oriented to the needs of the labour market [see Windolf, P 1990: 1; Windolf, P 1992 and Windolf, P 1993].

The research on higher education stated always an imperfect balance between higher education and labour market. However, the human capital theory sustained that both systems: higher education and labour market tends in long term to equilibrium between demand and supply. And the expansion of higher education is positive, as qualified human resources are more innovative, productive and flexible as low qualified human resources. Investment in human capital is investment in the future and the potential of modernisation of societies. On the contrary, others as e.g. Boudon [1974] argued that the expansion of education can’t be explained by the labour market development nor controlled by the market. The driving force is the individual competence of status and prestige and has in so far its own momentum. This explains also that in periods of over-qualifications people opt for higher education. The signal thesis [Thurow L. 1975] sustained that the education and training certificates becomes even more relevance in the selection process of human resources. Higher education and training certificates are signals for the capacity and the competence of further knowledge acquirement and improve the possibility to obtain a work place and/or a high wage work place [see Boudon 1974]. Conceiving education as an essential factor to obtain certain social status conduced to the hypotheses that an incrementing education level of the society requires even more efforts of the citizens to obtain even more higher education certificates. The individual accumulation of educational certifications doesn’t respond to the need of the society, but to the individual perception of the opportunity to improve their social status in the society and/or their position in
the labour market. This behaviour of individuals tends to create a permanent overproduction of high-qualified human resources in terms of the labour markets. The relation between higher education system and labour market tend to be in permanent inequilibrium [see Boudon 1974].

The professional structure is continuously changing caused by the permanent transformation of the production and service structure and the technological progress. This is widely discussed in socio-economic theories as the post-industrial society, the information society and the knowledge society. Parallel to the change of the professional structure, the educational structure of the work forces has experimented an up-grading caused by the education expansion [for Germany see Müller 1998]. In the 1980’s, on the background of the economic crisis, the hypothesis of the inflation of certification as an unintended consequence of the education expansion has been launched [Beck 1986]. However, the empirical data shows that there is still a positive relation between educational level and employment (in terms of employment rate and working conditions).

The actual situation seems not so new in the historical perspective. As in the beginning of the 1960’s, also the Lisbon strategy considers that there is lack of high-qualified work forces especially in the field of mathematics, engineering and natural sciences. To invert this situation, is considered as one of the priorities of the Lisbon strategy. Investment in human capital is essential for the success in the global economy focusing strongly on higher education. The policies in the EU were even more focused on the supply side of the labour market assuming that where supply leads, demand will follow. [Wilson 2008: 1] At the same time, caused by the transition to the service economy a decline of the traditional industrial skilled work is projected. But there are critical voices against the focus on the supply side of high qualified work forces as Thompson [2004] for the UK who considered such prognostics as too optimistic based on insufficient empirical basis. But at the same moment as a lack of natural science and engineering students is perceived in the EU, an over-supply in humanities and social science is stated, which gave place to the theories of over-qualification. This could have consequences on the labour status of the graduates depending on the field of knowledge area.

In the last three decades, the graduate labour market has changed substantially as social science research stated. An analysis of the effects of the expansion of education on the labour market in Germany [Schubert, F. & Engelage, S. 2006] indicates that the higher-qualified employees have been absorbed until the 1980 overall by the public sector. In the 1990’s caused by the decrease of public employment, the rate of higher-qualified persons in public employment has decreased slightly. From the 1990’s the private economy contracts became more frequent among higher-qualified employees. Nevertheless, the degree of higher-qualified employees working in the private economy is still minor in comparison to those who work in the public segment. This change in the rate of public and private employment can be taken as a main indicator of the
changes in the graduate labour market. Until the 1980’s, academic work forces were contracted overall in the public labour market i.e. as teachers or in the public administration. But the economic crisis and the retrenchment of the public administration reduced the weight of the public labour market and increments a trend to the private labour market. This produced also pressure in the private labour markets and the professional trajectories towards a higher valorisation of the formal education and training certification and a reducing of the relevance of the professional experience for the internal promotion in the enterprises.

More focused on the academic labour market, that means the segment oriented on research and development, Mangematin [2000], Mangematin & Ronin [2003], Dany & Mangematin [2004] and Lanciano-Morandat & Nohara [2002 and 2004] The new production of young scientist (Phd’s): A labour market analysis in international perspective. DRUID working paper No 03-04] suggested the emergence of a new intermediate labour market segment between the public and private segments. The traditional research labour market is characterised by the clear differentiation between public and private labour market (public and private research). The dominant form of labour contracts has been the undefined labour contracts. Through the increasing cooperation between public and private research an intermediate labour market is constituted characterised by fix-term labour contracts or training contracts. These intermediate segments are related to the increasing public-private partnership in the systems of scientific knowledge production or triple helix relations [Etzkovitz & Leyesdorf 2000] offering new forms of knowledge transitions and career pathways for academic workers. Taking into account the fragility of these partnerships, there is a need for flexibility, which is the characteristic of this intermediate academic labour market and which can be expressed in dualistic terms: precarious – stable work; statutory – non-statutory; education/training – work; wage work – non-wage work etc.

Pitcher & Purcell [1998] suggest that it makes no sense any more to talk about a uniform graduate labour market. It is a highly complex labour market segments with new and modified professionals roles. They reported, however, no deterioration in employment opportunities for graduate and little evidences of over-supply. But there are other studies stating an increasing underemployment under graduates [Brynin 2002; Hartog 2000 and Groot & van den Brink 2000].

The picture in the graduate labour market is quite different from one country to another. The rate of higher education students is very different between EU-country, and also their distribution among the knowledge areas [Ortiz, L. & Kucel, A. 2008]. This seems to indicate different approaches to educational expansion at the university level between the EU-countries. Reimer, D. & Noelke, C. & Kucel, A. [2008] stated that, in all but one of the 22 investigated EU-member countries graduates in humanities have a higher unemployment risks then the other
The social function of higher education in the social models of the European knowledge society

graduates. In respect to the occupational status, the workers with a graduate in health and welfare have a lower status in all countries as the others including graduates in humanities.

The expansion of higher education is, on the other side, related to the fact that many jobs are in a process of up-grading. Companies are nowadays looking for higher qualifications and recruit graduates for jobs and positions occupied traditionally by non-graduate workers. Also new functions has been added to jobs particularly in administration, design, technical, environmental and caring professions adequating them to the graduate workers. Arthur & Brennan & de Weert [2007: 42] are talking about the transforming capacity of the graduate workers turning non-graduate work places in graduate work places. This indicates a long-term substitution effect in the labour market displacing non-graduate workers from their traditional labour market segments. The expansion of higher education has this unintended effect still in the 1970’s and 1980’s. A constantly occurring phenomenon of educational up-grading of the work places has been observed. Qualified workers found that the educational level has arisen for jobs, in which such an educational level hasn’t been required before [see Halaby, C. 1994, and Clogg & Shockey 1984].

A German study about the changes in the income structure in relation to the qualification structure [Pollmann-Schult 2006 and 2006a] suggests that the income difference between high qualification group and the other qualification groups has been reduced in time. Overall in the groups of labour market newcomers (the 30 years old cohort groups) a reduction of the income difference can be observed. This confirms the hypothesis, that the entrance in the labour market becomes even more difficult for the higher-qualified persons. However it is still open if this trend towards the reduction of the income differences will be confirmed also in the elder cohort groups taking into account that the income difference between qualification groups tend to increment with the age of the employees.

In the last decades, the EU has witnessed an increasing flexibilisation of the labour markets, which has been accompanied by a de-standardization of the employment relationships. Atypical work relations as temporary work, part-time work and self-employment have increased. The de-standardization affects in general more the low qualified workers then the high-qualified workers, but also the corresponding indicators arise in the collectives of the high-qualified workers. In the last three decades, the work has evolved through more individualised and flexible employment forms. The momentum of this trend has gained speed and has widespread in different degrees into all kind of sectors and occupations. It has begun to undermine the previous standards of labour relations. Therefore, it can be considered as one of the most fundamental changes in the working life of the actual occidental society [Bergström & Storrie 2003 and De Cuyper et al 2008] For the enterprises, the liberalisation of the labour markets and the flexibilisation of the work arrangements is often considered as need to be able to compete in
the global markets minimizing adaptation costs. For the workers, on the contrary, liberalisation and flexibilisation implies that the economic and social risks are transferred from the companies to the individuals [Beck 2000]. The workers with time-limited work contracts or involuntary reduced working hours and in so far reduced income are probably exposed to mayor pressure offering less protection. Flexible work arrangements offers in some cases more freedom to the workers to organize their live, but for the majority of the workers it implies a higher degree of coordination with their relatives and friends. Accordingly, it is argued that a-typical work conditions constitute stressor factors causing probably impaired well-being, health problems and detrimental attitudes at work [Beard & Edwards 1995] Besides the a-typical labour relations, the traditional typical labour relations still exist. This situation has lead many social scientists to state a two-tiered labour market with highly protected workers on the one side and highly flexible jobs on the other side. Meanwhile the first highly protected segment is characterised by the civil servants and holders of permanent work contracts, generally elder workers in large enterprises, the second less protected labour market segment is marked by internships, short term contracts, temporary jobs for young people, new entrants and immigrants. In spite of that the unprotected work relations are more frequent between low-qualified workers, this can also observed among qualified and high-qualified workers. The creation of a dualistic, strongly segmented insider-outsider labour market is widely recognised. This trend caused the increment of new forms of social inequality not only at the line of education levels, but also within the same educational collectives depending on the specific situation of the persons or social collective (differentiated by gender, ethnicity, social class, religion etc.)

The workers affected by a-typical work relations are probably in the trap of precarious work for a long time suffering not only a job-insecurity but also an employment insecurity accompanied by income insecurity. Temporary work, mostly involuntary, provides generally higher risks and more unfavourable conditions then permanent contracts. So for example, the wage is in the EU-average lower in temporary than in permanent jobs. Access to non-monetary benefits, e.g. qualification measures and career opportunities, is more difficult. This affects also managers and professionals, whose shift to part-time work or flexible contracts is not cost-free. These groups tend to be marginalized and treated unequal at work [Edwards & Robinson 1999, Mallon & Duberly 2000] “Even where professionals are concerned – women in particular – the pattern seems to be one in which non-standard employees are marginalized rather than offered new opportunities to enhance their employability” [Hoque & Kirkpartick 2003]. Polavieja [2005] came to a similar conclusion based on study about the impact of deregulation on the labour conditions.

The changing quality of working conditions goes parallel to the changes in the living conditions and both trends are interlinked. The linkage between work and living conditions focused mainly
on the families emerged as a research issue in the 1960’s and 1970’s [see Perry-Jenkins et al. 2000]. In these decades, the west European societies are characterised by the male breadwinner model of families, which is as Kaelble [2007] shows has been a specific family model of the post-war period. In the course of the last three decades the family model switch to the model of double earner model presenting actually more then 50% of the couple households in the most EU-countries. This trend is accompanied by the increase of the single households with and without children. With the growing number of women in the labour market, Europe witnessed an important change in the family behaviour and new problems of coordination of work and family life emerged. Higher education is perceived as a factor to lower the risk of social exclusion and social downward mobility. The increase of the enrolment in higher education of women is for instance, perceived as a strategy to achieve gender equity.

The observed trends in the labour market in general (and in the graduate labour markets) indicate, that the social risks increments in all labour market segments. The concept of new social risks emerged in the discussion about the reform welfare state at the beginning of the 2000’s to reflect the changes in the social reality of the European states, to which the social policies must gave response. Taylor-Gooby and others [see WRAMSOC-project web: www.kent.ac.uk/wramsoc/index.htm ] has coined this term making reference to the phenomena of the aging society, the increasing corporation of women in the labour market and the increasing uncertainties in labour market, which distinguished the industrial society from the post-industrial society.

At the beginning of the 2000’s, Taylor-Gooby and colleagues introduced the distinction in the reform of the European welfare state between retrenchment “in response to fiscal pressures and demands that welfare states contribute to competitiveness through cost savings” and the modernisation of the welfare state to gave response to “the new social risks and meet the new aspirations of citizens.” [Taylor-Gooby 2005: 5]. The change from the industrial to a post-industrial society has been accompanied by the emergence of new social risks groups “that clearly do not belong to the traditional clientele of the post-war welfare state and yet are experiencing welfare losses.” [Bonoli 2004: 2].

This phenomenon has been caused by the pronounced earning inequality, but also by the increasing labour market instability. The risk of poverty affects now more social collectives then in the post-war period. Also the changes in the demographic structure (aging) as well as the changing family structures (two-earner couples or mono-parental families) are accompanied by “new problems and dilemmas in terms of reconciling work and family life” [Bonoli 2004: 2].

The impact of these new social risks is different between countries, but it can be observed in most countries. That means, that the welfare state has the challenge to be adapted in a period of retrenchment to the needs of social protection emerging in the knowledge society. Bonoli
defined the new social risks “as situations in which individuals experience welfare losses and which have arisen as a result of the socio-economic transformations that have brought post-industrial societies into existence: above all tertiarisation of employment and the massive entry of women into the labour force” [Bonoli 2004: 4]. The social risks extended to collectives, which are not covered in an adequate form by the traditional mechanisms of the welfare regimes. Bonoli mentioned the following social risks:

- Reconciling work and family life
- Single parenthood
- Having a frail relative
- Possessing low or obsolete skills
- Insufficient social security coverage.

On the other hand, Esping-Andersen [1999] establishes a typology of social risks, which are helpful to analyse the changes in the social risks [Schmid 2006]: Universal risks, group (or class) risks, life course risks and intergenerational risks.

The problem with this classification schema is that it brings together some quite different categories. For instance, the category of group (or class) risks includes disperse social collectives like miner, which is a social class risks and single mother, which seems more a gendered life course risks then a class risk. From our point of view, it is necessary to distinguish clearly between the risks related to social classes and other criteria of social distinction as ethnic groups, gender groups or religious groups which couldn’t be submitted easily under the traditional category of social class.

It is also important to make a clear distinction between the risks related to the social conditions of social collectives, on one hand, and the risks related to the decision taken by the individuals in the course of their life, on the other hand. The reasons lie in the fact that the social collectives are developing easier a group consciousness as the group of persons\textsuperscript{16}, which are negatively affected by the same life-course decision as for example to be a single mother or father.\textsuperscript{17}

For the analysis, how the social risks affect social collectives, it is also necessary to introduce a time dimension through the intergenerational risks. This last dimension can be seen as transversal to all the other risks categories as it allows to analysis the stability of mechanisms of social risks [see Table 2]
These categories are often overlapping taking as an example a young low qualification single mother. This woman – as pertaining to the working class – is affected by specific social class risks being more exposed to the danger of unemployment, but also to some specific disease related to her social status and profession. She is affected by gender risks (receiving a lower income compared to a male worker in the same situation). Additionally, she has been affected by the intergenerational risks in the highly probable case that she is coming from a working class family (low qualification level). And at the end, she is exposed to the life course risks having taking the decision to be mother (interruption in its professional career) and to live alone with her child (which requires higher needs to re-conciliate work and family life).

<table>
<thead>
<tr>
<th>Table 2: Typology of Social Risks</th>
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<tbody>
<tr>
<td>General</td>
</tr>
<tr>
<td><em>Universal risks</em> “are faced by all people in basically similar ways, the most mundane being death or increased disablability in old age.” [Esping-Andersen 1999]</td>
</tr>
<tr>
<td>Social dimension</td>
</tr>
<tr>
<td><em>Class risks</em> are these risks, which are bundled among an identifiable social class defined on the line of income, education and professions.</td>
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<tr>
<td><em>Gender risks</em> are typical for a certain gender groups as for instance heterosexual females, heterosexual males, homosexual females, homosexual males and transsexuals.</td>
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<tr>
<td><em>Ethnical risks</em> are typical for ethnical groups within a given society as for instance the Indians in the USA, the Sinti in Europe or the Arabs in France.</td>
</tr>
<tr>
<td><em>Religious risks</em> are these risks, which are bundled among a social group with a common religious belief.</td>
</tr>
<tr>
<td>Temporary Dimension</td>
</tr>
<tr>
<td><em>Life course risks</em> “are typical of a certain stage in the life cycle (as in Rowntree’s life cycle of poverty)” [Esping-Andersen 1999].</td>
</tr>
<tr>
<td><em>Intergenerational risks</em> are transmitted from parents to children This makes reference to the cases of genetic and disease transmission, but overall to the fact that educational attainment is strongly influenced by parents’ education background. For instance, the dropping out of school is strongly correlated with growing up in a single-parent family. [see Esping-Andersen 1999]</td>
</tr>
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</table>

The social risks can be conceived broadly as the limitation of the access to life opportunities; but also in a nearer sense as the risks to fall into poverty widely associated, in general, to the access to employment and, more specifically, to the access to employment, which offers adequate life perspectives. Sommer-Harris pointed out, that under this perspective “the new social risks are not so much ‘new’ in substance. It is still a matter of the distribution of...”

18 Taking into account that the gender studies insists in the social construction of the gender category, it can be assumed that within the broad category of female and male can made a distinction between these groups on the line of sexual behaviour assuming that the homosexuals are suffering discriminations in the society.
misfortune: poverty, illness etc. What is new is the distribution of these risks” [Sommer-Harris 2006: 4] and the causes of the risks.

The nearer approach of the new social risks starts from the assumption that the labour markets have changed considerably in the last decade’s incrementing their structural complexity and has caused new foci of uncertainty. The economic structure has changed by the increasing weight of the service sector in general. The model of the male breadwinner has eroded by the increasing quote of female employees. The full-employment and stable employment in one enterprise or in one economic branch isn’t even more guaranteed. The labour biography of the workers is even more characterised by the transition from one work place to another, but also from employment to unemployment and to employment again and from one employment status to another (employee, employer, self-employment and false self-employment). In this unstable work biography, the education level and the initial vocational training are important.

![Figure 2: Model of the traditional employment system](source: Schmid, G. [2006])

The labour market is characterised by a displacement of the unskilled and low-skilled workers by high skilled workers. High skilled workers have a higher chance to stay in the labour market. High skilled worker shows a significant higher employment rate and a significant lower unemployment rate. The employment in general has become more instable through the increasing use of temporary contracts, part-time work and self-employment, including false self-employment. The increased uncertainty of the labour market is accompanied by the diversification of the instruments used to protect the employees’ against this risk. These instruments are even more oriented to the re-integration of the unemployed workers and the means to adapt the qualification of the unemployed to the labour market needs incrementing their possibilities to re-entry in the labour markets.
It is obvious that the labour markets have changed substantially in the last three decades incrementing the deregulation, mobility, flexibility and uncertainty. Parallel the social structure of the European society has changed in respect of the family structure, the position of the women, the demographic structure and in general the cultural values. This changes has been conceptualised in the approaches of new social risks and of the transitional labour markets. In the political area, the response has been the promotion of a new concept of social policy based on the principle of activation oriented to improve the employability of the workers. A cornerstone in this strategy to reform the European social model is the improvement of the qualification level of the active population and the life long learning strategy. The Lisbon strategy has the goal a) to improve the technological innovation capacity of the EU-economy and b) to improve the qualification level incrementing the rate of high-qualified population. This is considered as the main road to achieve the strategic objective of more and better jobs. Higher education is crucial to achieve this objective, which explains the relevance given to the reform of the national higher education systems in the course of the Bologna process.

The graduate labour market has changed substantially in the course of the last four decades. The traditional graduate labour market – public administration and public services as education, health and research – are still highly important, but the private and public-private labour markets segments have gain weight. This seems accompanied by an increasing flexibility and uncertainty also of the graduate employment in spite of that the indicators shows that the labour
conditions of the graduate workers are still better than in the other categories of workers. And it must be highlight that the universities are an important employer of work forces in a-typical working conditions. In other words, the social risks are affecting also the graduate workers (overall the young graduate workers) and the transitionality of the labour markets seems to be more and more a main characteristic also of this labour market segment. This implies, that the higher education becomes more and more important in coherence with the activation policies and the policies to mitigate the new social risks.

1.2.2. Higher education and society

The reference to the new social risks and the transitional labour market goes still beyond the mere reference to the labour market introducing social challenges in terms of equity and social justice. These terms have received considerable attention in the social science debate about (higher) education as well as in the policy debate underpinning that education has been always subject of social struggles. Also higher education has been from the beginning of the constitution of the modern universities a vehicle of social struggle to increment the equity in access to social opportunities. In so far, it has been and is subject of class struggle, but also in other social conflicts as for instance the gender equity.

Education has played from the beginning of the 19th century a role in the social struggle about equity in life chance and political participation of the different social groups. In the industrial society, the different social groups have used education as political instrument to increment their political influence and participation. The expansion of education expressed a change of the principle to redistribute social opportunities between social collectives from the aristocratic principle of membership to a family and social class to the principle of meritocracy expressed in education certification. It is at the same moment, the bourgeois principle to legitimize social inequity.19 In the modern capitalist society, inequity is accepted if it is legitimized by individual performance and capacities and the configuration of social equity in the access to life chance is socially accepted.20 The meritocratic principle expressed, in certain way, the application of the liberal ideology of the market on the distribution of life chances. The individual disposition to develop his capacity, competences and performance potential determined, at least, the position

19 We understand as social inequity the difference in the access to social resources for social reasons, for criteria related to a group, category or class of persons, which shows one or more common characteristics, on which they are categorized in a social hierarchy. Indicators for the difference in access to social resources are taken commonly income, properties, power and social prestige. (see Hondrich 1984: 269 and Hadjar, A. 2008: 31)

20 ”Das wahrgenommene Ausmaß sozialer Ungleichheit wird akzeptiert, wenn die als faktisch wirksam erachteten Kriterien sozialer Selektion für legitim gehalten werden. D.h. wenn individuelle Leistungen und Fähigkeiten als legitimate Selektionsprinzipien gelten und Chancengleichheit den dominanten Standard sozialer Gerechtigkeit darstellt, dann wird Ungleichheit in dem Maße akzeptiert, zu dem an Chancengleichheit geglaubt wird und das Prinzip individueller Leistung und Fähigkeit als weitgehend realisiert gilt.” (Mayer 1975: 72)
of the individual in the society abstracting from the dominant social structure of the societies.

Education and education certificates occupy, for this reason, a prominent position in the strategies to social equity focused on merits. The accesses to life chances – income, education and social status – must be uncoupled from the social origins of the individual [see Dahrendorf 1965].

The higher education as the education in general has increased from the middle of the 19th century constantly in the developed countries. The growth of the universities in the second part of the 19th and great part of the 20th century can be described in a simply way: in each year there are more students than in the year before.

Following Müller et al [1997: 178] we can establish three waves of the education expansion in the developed countries:

a) The first wave from 1870 to the First World War is characterised by the creation of national education systems. Successively the education institution has been submitted under state administration and the influence of the church has been reduced. The introduction of the compulsory education, the education is opened for children form all social classes and the degree of analphabetism has been reduced. Also the number of students at the universities increased in this period for example in Germany, France and the USA [see Windolf 1990] considerably. This makes reference to male students until the end of the 19th century, but also for female students form the beginning of the 20th century on. In Germany, the access of women to the university has been allowed in Prussia in 1907, but in the USA yet in 1870 around 15% of students have been women.

b) The second wave from the end of the First World War to the beginning of the Second World War accompanied the expansion and consolidation of democracies in the occidental industrialised countries. In this phase, the secondary education has been opened for wider social classes. Also the number of students has increased in generally. However, the economic crisis caused a decrease of the number of students in Germany and in France. On the contrary, the economic crisis didn’t affect the growth of the number of students in the USA. In 1931, in the USA 6,9% of the cohort of the 24 years old man and 4,2% of the 24 years old women obtained an university diploma, meanwhile in Germany the rate of inscribed students has been 4,1% for men and 1,1% for women, and for France 3,4% (men) and 1,2% (women) respectively. At the end of the 1930’s the growth of the number of students became slower. Only in fascist Germany, the state intent to limit the student’s number by the introduction of a numerous clausus was successfully.

c) The third wave started after the Second World War, but in different years depending on the countries. The compulsory education was expanded over the lifetime of the children and the
non-compulsory second education was opened for new social classes, so that their social composition became more heterogeneous.

The general expansion of education has provoked a profound change in the education systems and is still causing changes. The integration of more students in the higher education system caused an internal differentiation of the system and new forms of coupling to other social systems as the economic system (labour market). This affects not only the structure of the higher education system but also its orientation. It changed from a non-utilitarian education to a utilitarian education focused on professionalization oriented to the needs of the labour market [see Windolf 1990: 1].

To explain the expansion cycle of the education, there are in generally mentioned three theories [see Windolf 1990: 17]: a) the functional theory, b) the theory of the status competition and c) the political theories. These theories expressed in certain way also different perspectives analysis: a) systemic interrelation between higher education system and labour markets; b) individual level of decision making about education options, and c) the level of social collectives as social classes, gender groups and ethnic groups.

a) Within the functional theory exist two traditional trends to conceive the function of education for society. The first strand sees the function of education in the socialisation of the students in respect to the future requirements of labour in the capitalist system [see Bowles & Gintis 1978: 52]. The educational institutions transmit the value orientations and patterns, which are needed for the societies based on the division of labour. In other words, the professional competence and knowledge transmitted in the higher education are not so essential for the capitalist society, but the permanent disposability of performance and flexibility. The second strand of the functional theory, the human capital theory sustains that education increments the productivity of the work forces. Qualified human resources are more innovative, productive and flexible as low qualified human resources. Investment in human capital is investment in the future and the potential of modernisation of societies. The individual demand for higher education depends on the benefits expected form the corresponding investment. In the logic of the functional theory, the growth of higher education depends on the economic growth and the technological progress. Higher education satisfied the demand of qualified human resources in the societies. The Higher education and labour markets are two systems, which are regulating themselves interdependently. In spite of the periods of under- and over-qualification, they tend in long term to equilibrium between demand and offer of high-qualified human resources. There is a simple relation between economic growth and higher education expansion: the increase of the demand of high qualified human resources permits the expansion of the higher education. In periods of economic crisis, the number of students will, following this theory, decrease. In other words,
the growth of the higher education system isn’t endogenous but exogenous produced by the economic development.

Yet at the beginning of the 19th century, based on the empirical study of the evolution of the number of students in Germany from 1866 and especially in the “Great Depression” around 1875, the German economist Franz Eulenberg put in doubt the simply relation between market growth and higher education growth. He called the attention to the paradox that a favourable economic development caused the trend to limit the number of students, and, on the contrary, an unfavourable economic development is accompanied by an increment of the number of students.21

b) Contrary to the functional theory, Bourdon argued that the expansion of education can’t be explained by the market development nor controlled by the market. The expansion of education isn’t caused by the demand of qualification or the need of innovation competences. The driving force is the individual competence of status and prestige. More focused on the labour market, Thurow [1975] argued in the line of the signal thesis, that the education and training certificates becomes even more relevance in the selection process of human resources. Higher education and training certificates are signals for the capacity and the competence of further knowledge acquirement and improve the possibility to obtain a work place and/or a high wage work place [see Boudon 1974]. Conceiving education as an essential factor to obtain certain social status conduced to the hypotheses that an incrementing education level of the society requires even more efforts of the citizens to obtain even higher education certificates.22 Collins [1979] calls the attention, that this theoretical strand has its roots in conflicts theory or the status group theory going back to Max Weber. It connects also to the capital theory of Bourdieu, in which the cultural capital – expressed for example in educational certification – is an element of distinction between social groups and classes. Through cultural capital in form of educational certifications, for instance, the citizens are maintaining or obtaining the access to social status groups an in so far to scare resources as power, richness and prestige. In this sense, the expansion of education isn’t due to technical-functional or economic-functional needs of modern societies, but to the role of education in the struggle about social status between social classes and status groups. The individual accumulation of educational certifications doesn’t respond to the need of the society, but to the individual perception of the opportunity to improve their


22 “Wenn in meritokratischen Gesellschaften der Bildungsabschluss zu einer wichtigen Voraussetzung für sozialen Aufstieg und Berufskarriere wird, verhalten sich die Individuen entsprechend der Logik des Wettrüstens: Je mehr, desto besser.” (Windolf 1990: 6)
social status in the society and/or their position in the labour market. What form the individual perspective is rational, could be irrational from the perspective of a given society. This behaviour of individuals tends to create a permanent overproduction of high-qualified human resources in terms of the labour markets. The relation between higher education system and labour market tend to be in permanent inequilibrium. [see Boudon 1974 and Bourdieu & Passeron 1971].

c) A third strand of explanation is the political theory, which focused on the conflict between social collectives in turn of social and cultural emancipation and participation in political decision making processes. This strand doesn’t ask for the individual reasons of decision, but for the environment in which the education expands. The individual can decide between different option only if these options exist and the corresponding infrastructures in form of schools, universities, human resources, libraries etc has set up. The decisions of the policy decision makers23 - or in the EU-slang: the stakeholders - are creating the positive or negative conditions for the education expansion. This strand focus on the political decision process to impulse, sustain or slower the expansion process.

The expansion of the higher education has been, without doubt, object of the political class struggle with deep consequences for the society. From the beginning of the 19th century on, the expansion of the higher education expressed that the meritocracy as been a vehicle to expand the power of the bourgeoisie against the aristocratic class. The universities accomplish a relevant function in the political emancipation of the bourgeoisie. Qualification and professional experience legitimize the exigencies of the bourgeoisie to participate in the political decision process and its role in the states. The educational certification became a functional competitor in front of the aristocratic privileges in respect on the influential positions in the public administration [see Windolf 1990]. In this period, the higher education has the function to provide civil servants for the public administration. But the higher education and its education certification created also new mechanism of social exclusion. The access to higher education was not open for all. It reduced the advantages of the higher education to the bourgeoisie and more concrete the social strata of academics. In the course of time, the higher education certificate converted to an equivalent to have privileges in the access to higher positions. Higher education institutions have been exclusively a place for humanistic or scientific education but also a mechanism for unequal distribution of life chance between the social classes.

The history of higher education in the last two centuries is characterised through phase of social openness and closure. The system of higher education open itself successively for new social

23 We make reference to all social actors participating in the different stages of the decision making process as for instance the parliament, the government, the political parties, the entrepreneur associations, the trade unions, the non governmental organisations.
The social function of higher education in the social models of the European knowledge society

collectives, but it closed the door for other social collectives claiming for the same rights of access. Social upwards mobility through higher education certificates required the scariness of the certificates. The history of higher education shows that the expansion of higher education has contribute without doubt to social mobility and higher political participation, but it has passed also by periods of restoration to limited the access to higher education impeding an inflation of certifications” [Windolf 1990: 55]

One of these phases of retrenchment of higher education has been the 1930’s. In this period, European countries, but also the USA opted for policies to limit the access to higher education. In France, for instance, the conditions to obtain the bachelor degree to access to higher education have been put higher. In 1932, the German government concede more autonomous to the universities to select the students with the objective to limit the access to higher education. Great Britain introduced the numerous clausus for medicine and the fascist German government introduced 1933 a general numerous clausus. The Dutch government introduced study fees. Other measures were the restriction to access for foreign students (the Netherlands) or to limit the access to some professions for foreigner in spite of obtaining the higher education certification [France 1933: Loi Armbuster]. Also the access of women to higher education or to the corresponding professions has been formally or informally restricted in many European countries and in the USA [see Windolf 1990: 89ff]. The closure of higher education didn’t affect only the social classes, but also other social collectives as women and foreigners. Looking on the restrictive higher education policies in the 1930’s shows the arsenal of measures as numerus clausus, study fees, restriction of the access to high-qualified work places (over all in the public administration and specific professions as medicine, jurisprudence etc.). It also made evident that the ideal of an elite university came to an end. But this trend caused a strong resistance between the academic personal: opting for the reduction of the number of students.25

In the 1960’s and 1970’s, it is observed, that higher education didn’t provide the social opportunities, which are expected in the course of the democratisation of the access to higher education. At the end of the 1970’s, Boudon & Lagneau [1980] stated that the probability of graduated worker to access to a socio-professional category, which traditionally corresponded to this qualification level, has decreased. In spite of the methodological problems, they have

24 Iron law of higher education: After a phase of openness followed a phase of closure to defend the obtained rights.

25 Adolf Löwe held a speech at the “Davoser Hochschultage” in 1931 addressing the education problems of the German university. He observed that the expansion of higher education is related to the will of the non-privileged classes to obtain new life opportunities and to achieve a new configuration of the socio-economic conditions in Germany. And he analysed the massification of the higher education – expressed in magisterial classes with more than 1.000 students. To resolve this problem he saw only one solution: to limit the access to higher education. “In erster Linie müssen die Durchschnittsbegabungen der heute die Hochschule beherrschenden Schichten zahlenmäßig zurückgedrängt werden” Löwe 1932: 6 cited in Windolf 1990: 101)
calculated that the probability to access to the position of an executive of an individual with a higher education certificate has diminished between 1992 and 1975 in 12%. 26

Grusky & Hauser [1984] have compared different studies about social mobility of 17 countries. They concluded that the social mobility of the middle and lower class in the 1960’ hasn’t prejudiced the upper class. Higher qualified work forces coming form the middle and lower classes occupied newly created work places in the service sector and the public administration. Overall the education sector absorbed a considerable part of the produced higher qualified work forces through its expansion. In the 1960’s, the expansion of the higher education fell in the period of economic expansion. But in the 1970’s and 1980’s, the economic crisis hardened the conditions of social mobility. The stagnation or the reduction in the creation of higher status position incremented the competition. In this period, the increasing number of unemployed academic workers indicated a decoupling between the economic and educational development. As in the beginning of the century, the different social classes react with more educational efforts in the next generation to maintain their social positions.

The expansion of education and higher education in the last two centuries cannot be explained without the generated perspective of social and professional upwards mobility. The decision for higher education is related to the perspective of social prestige, but also for professional careers. The political issue of equity of opportunities is based on the expectation that the formal education certification improves the opportunities of professional careers and of social mobility. Expansion of education and meritocracy are complementary processes of a progressive beaurocratisation and rationalisation of western industrial societies. The principle of meritocracy has been imposed progressively in the last century’s substituting the rights derivate from the pertaining to an exclusive social class or simply from corruption. The meritocracy has been imposed first in the public administration. The professionalization of the public administration has been a one requisite for the modernisation of the public administration [see Weber 1956: 736]. Without higher education, the reform of the public administration would be impossible. The higher education delivers the qualification, which are necessary for the modern public administration.

26 “Aunque es sumamente difícil efectuar cálculos precisos en lo que se refiere a la correspondencia entre el diploma y el status social, debido al elevado número de elementos que habría que controlar (por ejemplo: edad del individuo, edad de salida del sistema escolar, momento de entrada en el mercado del trabajo, etc.). Nuestros análisis relativos a Francia permiten estimar en un 12 por ciento la disminución de las oportunidades que tiene un individuo poseedor de un diploma de estudios superiores de llegar a ser ejecutivo entre 1962 y 1975 (sin embargo, esas oportunidades han permanecido casi constantes para un diplomado de una Escuela de Altos Estudios o de Medicina) ; por el contrario, las oportunidades de llegar a ser oficinista han aumentado en un 6,2 por ciento durante el mismo periodo. Hay que añadir que esas proporciones son mucho más marcadas para las mujeres: las posibilidades de que lleguen a ser ejecutivas cuando tienen un nivel de instrucción superior han disminuido en un tercio y las de llegar a ser oficinistas han aumentado en un 12 por ciento.” [Boudon & Lagneau 1980: 2008 footnote 5]
But higher education hadn’t only the function to deliver qualifications but also to select. The university select the candidates for higher positions in the public administration not only on technical criteria, but also on the criteria of political ideology, social origins and lifestyle [see Windolf and Bourdieu]. Windolf called the attention to the fact, that the institution, where the candidate have studied, plays an important role in the selection process of most of the industrialised countries substituting the traditional forms of patronage. 27 The certifications emitted by certain institutions emit became a signal for competences and characteristics 28 and were considered relevant for the professional career in the public administration. These signals doesn’t implies personal contacts, personal patronage. The signal is sufficient.

Brennan & Naidoo [2008: 228] underline that the one of the principal function of education is selection. Also Luhmann considered that the main function of education concerning to other social systems is the selection of persons. The selection in the modern civic society is based on the discourse of meritocracy. “Central to the liberal position is the assumption that higher education enhances productivity in the labour market and that, therefore, special rewards to those who possess its qualifications are justified and are functional to society.” [Brennan & Naidoo 290] The access to these positions is regulated through the credentials. It is assumed that these positions offered better working conditions in terms of income, responsibility etc. and provided a higher status in the society. From the standpoint of meritocracy it is important to allow the access of any individual to the education system designing then the internal selection process, so that only the persons with the required merits have access to the next steps. As the higher education is, in principal, the last phase of the education system, the access to higher education provision depends on the other educational subsystems. In so far, it is considered that the responsibility of the higher education system for social equity is limited. Woodrow mentioned this and other myths, which are claimed against promoting equity in higher education system:

- “it’s not the responsibility of higher education to promote social inclusion”
- “equity is the enemy of academic excellence. Low status students will lower standards”
- “the admission of access entrants is the last resort of institutions desperate to recruit”
- “we are in favour widening participation, but at present we just cannot afford to.” [Woodrow 1999, p. 343 cited by Brennan & Naidoo 2008]

These arguments are based on the assumption that the problem of social equity in higher education is exclusively related to the access to higher education provision assuming that

27 Die Institution, an der man studiert hat, ersetzt traditionelle Formen der Patronage.
28 For instance: pertaining to a family from a upper class (großbürgerliche Familie), the “esprit de corps” and a liberal –conservative ideology.
“inequality of inputs is of concern but inequality of output are regarded as necessary, even essential. This is basically a functionalist belief in the need to get the right people into the right social positions, to general benefits of all” [Bernnan & Naidoo 2008]. Actual policies of gender mainstreaming follows, in principle the argumentation line of the meritocracy, arguing that the access to position is gendered in favour to the men resting relevance of the merits achieved by the women. This is against the principle of meritocracy, which assigned the best positions to the best-equipped persons legitimating so, inequalities of welfare and status in society.

However, there are powerful voices insisting that higher education has a function in the achievement of equity and that higher education institutes must change radically to contribute to this goal.29 But the goal of social equity defined in terms of social up-ward mobility includes also down-mobility in the case that a pyramidal social structure is accepted and the assumption of meritocracy as structuring principal will be really applied. “For disadvantaged groups to change places with advantaged groups requires some downward mobility to make space for some upward mobility, other things being equal in the labour market and social structure” [Brennan & Naidoo 2008: 293]. On the contrary, the expansion of higher education would have the effect that the maintenance of the social status will require even more higher education credentials on lower social status levels.

1.2.3. The internal perspective of higher education

The description of the internal perspective will be focused on two aspects: A) the internal differentiation of the system of higher education and B) the professionalization of graduate work.

A) The internal differentiation of the higher education could be seen under different aspects and the social science research provided different scheme. A first proposal as been the distinction between elite, mass and universal higher education, which provide not only a historical scheme but also a scheme to distinguish different type of higher education sectors “Elite higher education is supplemented in the process of expansion by mass higher education and later additionally by universal higher education” [Teichler 2008a: 354]. Another classification scheme is delivered by Birnbaum [1983] proposing the systemic diversity (institutions), structural diversity (organisation), programmatic diversity, procedural diversity (didactic), reputation diversity (institutional status), constitutential diversity and value and climate diversity. Teichler [1988] proposed to make distinction on the line of (1) short-cycle higher

29 The report of a 1998 UNESCO conference report expressed this clearly: It is now clear that, to fulfil its mission, higher education must change radically, by becoming organically more flexible, and at the same time more diverse in its institutions, its structures, its curricula, and the nature and forms of its programmes and delivery systems. [Mayor 1998... 2]
education or non-university education versus long-cycle or university education; (2) academic versus vocational higher education; (3) unitary, binary and hierarchical systems; (4) multipurpose versus specialised models; (5) vertical systems, (6) elitist models and (7) comprehensive higher education systems. Resuming different schemes handled in the international discussion, Teichler considered that the scheme to capture the process of differentiations “sort differences between institutional units to a varying extent vertically and horizontally; and refer to a varying extent to formal elements (e.g. institutional types, levels of programmes, official functions of study programmes) and informal elements (e.g. ‘profiles’, ‘reputation’)” [Teichler 2008a: 355]. In the context of this exposition of the methodological framework of the NESOR-project we don’t refer to all of these dimensions. We pick only two dimension, which are considered important for studying the reaction of the higher education systems to the above described challenges coming from the economy and the society: the organisational differentiation in knowledge fields and the institutional differentiation including the processes to close the access to higher education provisions.

1.) The organisational differentiation in specific fields of education: This process is related to the differentiation of science in disciplines and sub-disciplines. Since the 19th century, “the discipline has functioned as a unit of structural formation in the social system of science, in systems of higher education, as a subject domain for teaching and learning in schools, and finally as the designation of occupational and professional roles. [Stichweh 2001: 13.727] The scientific disciplines and subdisciplines determine in great manner the professional careers of the academic workers in higher education. The progression within higher education is framed within the scientific disciplines and induced the migration form one university to others. The universities are mainly organised in faculties and departments using as organisational principle the scientific disciplines. However, the modern system of scientific disciplines and sub-disciplines is not static but dynamic open for the inclusion of new scientific disciplines as for instance computing science, the change of boundaries between scientific disciplines as for instance biotechnology or the disappearance of disciplines or sub-disciplines.

But the boundaries of scientific disciplines or sub-disciplines do not correspond exactly to the curricula required by the labour markets or the professions. This produces tensions within the higher education organisation and the need of interdisciplinarity in the design and realisation of educational programmes.

2.) An institutional differentiation of the higher education systems has generally accompanied the expansion of higher education. The phase of the openness and democratization of higher education is followed by a phase of closure and internal selection. In the Unites States but also in France, the establishment of elite universities has produced an internal differentiation between mass and elite universities, which is accompanied by the devaluation of the
certification of the mass universities. These certifications proved a certification but do not signify the privileged access to certain professions for example in the public administration. Also the creation of polytechnic, as well as the differentiation between public and private higher education institutions can be seen under this perspective. However, the form of the institutional differentiation of the higher education system depends also on the linkage between the secondary education and the higher education. In the case that the secondary education has a strong function of selection, the pressure is lower to create internal selection procedure within the higher education system. Windolf [1990] sustained, that the creation of elite universities caused in long term also a similar trend in the secondary education producing there a differentiation process.

To the expansion of higher education and the proliferation of higher education certificates, the system reacts with an institutional differentiation reinforcing the performance standards to access to (elite) higher education and positions of higher social status. Under the pressure of educational expansion and economic crisis, the institutional differentiation became even more a mechanism of social closure. Incrementing the access cost and the access as well as the examination standards excluded the pupils from the middle and lower class form the elite universities or faculties [see Windolf 1990: 112ff].

The institutional differentiation of the higher education system implies also a social differentiation of the students. The students of the elite institution are coming in their majority (or exclusively) from the upper social classes. The middle and lower social classes are not excluded from the higher education system as in the 19th century, but they have practically no access to the elite universities and elite faculties. The elite institution in the 20th century didn’t select formally on criteria of social origin but on educational performance. Only the best pupils have access to the elite institution, but they are coming from the upper social classes. Selection criteria of education performance and social origin didn’t exclude each other. On the contrary, the post-war period shows that the performance criteria are strengthening the social exclusivity of elite higher education [Windolf 1990: 104].

Under this aspect, the actual strategy to create universities of excellence and research networks of excellence can be interpreted as a new phase of internal differentiation. Students, which are forming part of the research networks or studying at this universities, will have better labour market chance as the students of the other universities.

Another aspect of the institutional differentiation is the differentiation of the curricula in different cycles. In many countries, the curricula is organised in different cycles. The Bologna
process has the aim to generalise the three-cycle-model for the European higher education area. This opens the possibility to reinforce the selection process within the higher education system introducing access barriers form one cycle to another.

B) For Parsons & Platt [1973], the professionalization process in higher education is based on the institutionalisation of the scientific cognitive rationality. They make the clear distinction between general education (field A) and professionalization (field B), which has been also present in the Humboldt’s model of higher education.

| Figure 4: Institutionalization of cognitive rationality in the structure of university (adapted from Parsons & Platt 1973: 92) |
|---|---|
| **Institutionalisation of cognitive complex** | Knowledge “for its own sake” | Knowledge for “problem solving” |
| L | The core of cognitive primacy (research and training by and of specialists) | Contribution to societal definitions of the situation (by “intellectuals” as “generalists”) |
| **Utilization of Cognitive resources** | General education of “citizenry” (as “generalists”) | Training for professional practitioners (as “specialists”) |
| A | G |

Source: Parsons & Platt 1973: 92

This distinction is observable also in the actual debate about higher education not only in the EU but also worldwide. However, within the Lisbon-strategy the aspect of professionalization is interpreted stronger as vocationalisation in the sense of incrementing the employability of the students.

The process of professionalization is oriented to the labour market, to facilitate and improve the access of the students to the labour market. Similar to the vocational training systems, also the

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31 Weingart (2005: 17) pointed out that the generalisation of the action typ base don scientific rationality (or research) is the criteria, which supports the concept of knowledge economy/society.
higher education has an orientation to prepare the students for the exercising of professions. That conducd to the question, which labour markets are the destination of the higher education students. The short review of the history of European university focused on the German and the French model indicated that the main labour markets for the higher education students has been and still is the public administration, public services and the public science systems. This situation has changed in the 1980’s. For several reasons, the public area has been unable to absorb the increasing number of graduated students incrementing so the number of students looking for work in the private sector. This is accompanied by the transition to the knowledge economy, in which work places, which require high qualifications, are growing up.

The relation between higher education and labour markets is actually more complex then 40 years ago. In correspondence, higher education must found mechanism to integrate adequately the stimuli coming from the economic system in their system. The pressure on the higher education system increased even more as the high-qualified employment is seen has the type of employment of the knowledge economy. Yet the concept of the post-industrial society developed by Bell postulated an increment of the work place based on scientific knowledge. Different political concepts as for instance information society, knowledge society and risk society are assuming the crucial role of scientific knowledge for the society [see Weingart 2005: 14). But it is the political label of the knowledge economy, laying the ground of the Lisbon strategy, which conceived scientific work places as the main competition factor of the EU-
The social function of higher education in the social models of the European knowledge society

economy. This implies a closer linkage of the public and private research system as well as the demand to bring the higher education nearer to the labour markets.

The second aspect of “the professionalization” is the provision of qualified staff for the higher education system itself. The professionalization of the academic staff is generally conceived under the aspect of forming research staff omitting in certain way the core activity of the higher education institution: education and training. The discussion about higher education avoids constantly asking, which are the core competences of the higher education staff. This doesn’t mean that there is no didactical innovation or discussion in the higher education. On the contrary, there is a huge range of innovation and literature. But also these discussion and innovations avoids generally asking for the core competence of higher education staff.

The model of higher education based on the interrelation between teaching and research covers, in principle, this aspect. Notwithstanding the switch from the teaching to the learning paradigm as a cornerstone of the Bologna process seems to undermine the relevance of teaching in the higher education systems. The promotion of the concept of lifelong learning delegates more responsibility to the learner and focuses on the creation of an adequate environment for learning. The tasks of the lecturers are switching from teaching to mentoring. This seems to undermine the importance of teaching in the process of learning. Nevertheless, self-learning is only one part of the learning process and generally related to the acquisition of empirical knowledge through books and lectures. But the main part of the learning process is a social process, where two and more persons are interacting. The reinforcement of the nexus between teaching and learning gains relevance under the permission that the social equality in higher education is not measured only through access indicators but also through success indicators.

Taking in serious the interrelation between learning and research implies to ask for the teaching (and learning) competence of the researchers, which are acting as lecturers. The whole building of the higher education system is traditionally based on the assumption that a full-trained researcher is also able to teach. But this can be put in doubt in a system, which is highly differentiated in scientific fields, disciplines, sub-disciplines, faculties and departments.32 In addition, in the universities – as the paradigm of higher education institutes – the research activities have had always a higher consideration then the teaching activities. In this sense, to define role of academia in the social model of the European Knowledge society requires a discussion about the quality of the interrelation between research and education beyond the

32 The success of the German university model based on the interrelation of teaching and research in the transmission of humanistic values and not only in the achievement of research results can be put in doubts as the implication of German scientist in the fascist regime (see for instance the biography of Heidegger from R. Safranzki (1994) Ein Meister aus Deutschland. Heidegger und seine Zeit).
The social function of higher education in the social models of the European knowledge society

statement of the validity of higher education in research, but also of the teaching competence of the academic staff and the adequate learning environment.

The consideration of the nexus learning-teaching-research as the core of the university in the system of tertiary education, make it is necessary to progress in the comprehension of this interrelation “We must stop merely asserting a close relation between research and teaching, and start exploring carefully the nature of this relation as it exists and as it might exist in universities of the future” [Robertson & Bond 2005: 532].

Major & Palmer [2006: 619] are talking about the myth that the scientific expertise is sufficient to good teaching. This myth has dominated the higher education system until the 1970’s, but from then on the situation have changed through the creation of teaching and learning centres in a substantial number of higher education institutes, strategies of human resources development, publications on pedagogy and didactics in tertiary education, but also by the implementation of evaluation procedures [see Teichler 2005: 458]. However, as far as the revision of the literature shows, there exists no clearly defined professional profile for this work. On the contrary to the teachers at the primary and secondary schools, to exercise the profession of an university lecture doesn’t requires formal competences in education, pedagogy or didactic. The access to the position of a lecturer at a higher education institute is generally based on the research activity.

1.3. Higher education as social system

The analysis of the higher education, as a complex social system by it self and its relation to other social systems, requires a sociological scheme of its internal configuration as well as its articulation with other social systems and the society at all. We take here as references point first the study of Parsons & Platt titled “The American University” [1973]. In a second step, we will discuss the systemic perspective of Luhmann, who conceived the education system - as all social systems - as an autopoietic system putting emphasis on the primary function to reduce contingency and the secondary function of selection of events. In a third step, we will go into the discussion of the function of education for the stratification of society or for the policies of equity taking as reference the work of Bourdieu on cultural capital. The objective is to obtain valuable indications to analyse the function of higher education in the European social model.

33 Schimank considers that the lecture of the study of Parsons & Platt about the American universities seems sometimes old fashioned, but on the other hand also very modern providing observations and ideas, which are still actual and relevant to understand the actual developments and tensions in the university systems. From our point of view, the revision of this study helps us to obtain an idea of the complex articulation of the universities to its environment.
The modern university took shape in the course of three revolutions: the industrial revolution caused by technological innovation; the democratic revolution, whose major expression is the French revolution and the independence of the United States of America (USA); and the educational revolution. The educational revolution - understand as the “institutional formalization of learning processes” [Parsons & Platt 1975:3] conducd to a quantitative extension of education to the population in the sense of the access to formal education for the masses, which has been practically achieved in Europe and the USA in the 20th century. The generalisation of the higher education - the universal access to higher education - seems the next logical step in this process.

The study of Parsons & Platt is framed in the theory of systems of general action developed by Parsons. It used the famous AGIL-scheme by which Parsons expressed the thesis that each action system must accomplish four basic functions: Adaption: Goal-attainment, Integration and Legitimation. He related to each function a specific complex of action system (see figure 6)

![Figure 6: Structure of General Action System](image_url)
Each of these action systems must accomplish also the mentioned four functions. For this reason, Parsons proposed a scheme of 16 differentiated sub-action system. This complex scheme becomes still more complex by the differentiation made by Parsons between unifunctional and multifunctional systems. Multifunctional systems are these empirical entities, which are fulfilling more then one functions. In fact all empirical systems as households, enterprises, church, schools and universities are multifunctional systems. The unifunctional systems are non-empirical systems. But the multifunctional systems could be mainly devoted to one of the four systems. So among the empirical social system, the enterprise is mainly devoted to the function of adaption (economy), the universities as well as the churches to the legitimation (fiduciary system), the family to integration (societal community) and the public administration to goal attainment (polity).

![Figure 7: The in-depth structure of the social system](image)

<table>
<thead>
<tr>
<th>Articulation with cultural meaning system</th>
<th>Articulation with action conditions of societal normative order</th>
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<tbody>
<tr>
<td><strong>Fiduciary System</strong></td>
<td><strong>Societal community</strong></td>
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<tr>
<td>Civil religion</td>
<td>Moral community</td>
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<tr>
<td>Rationality System</td>
<td>Telic System (kinship, studentry, etc.)</td>
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<tr>
<td>A</td>
<td>G</td>
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<tr>
<td>Commitment of resources to production</td>
<td>Organisation</td>
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<tr>
<td>Investment</td>
<td>Production-marketing</td>
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<tr>
<th><strong>Economy</strong></th>
<th><strong>Polity</strong></th>
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<tbody>
<tr>
<td>Articulation through technology with physical environment</td>
<td>Articulation with action conditions of effective collective goal-attainment</td>
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</table>

Source: Parsons & Platt 1973: 428
In so far, the universities as an empirical social system must accomplish internally - besides the function of legitimation – functions of integration, adaptation, and goal-attainment. In other words, the main function of the universities is the provision of rationality systems (science) and their development (knowledge development). But to maintain itself, the universities must develop economic strategies, create an internal polity system to take decision and to assure the integration of the persons (academic personal, students, administrative personal etc.) into the system.

Taking in account that also the other four social systems must accomplish again the AGIL function, a scheme of 16 sub-systems is also established at the level of the social system. In so far four sub-systems exists within the fiduciary system. The main function of the universities is located in the field of adaptation that means the development of rationality systems. The rationality system has as well as the system of civil religion a specific relation to cultural system and the symbolisation.

![Figure 8: Grounding of cognitive rationality in general systems of action](image)

Source: Parsons & Platt 1973: 92
Without discussion in depth this approach, this brief outline indicates the complex relation of the university to its environment. And it must be added that from the sociological point of view of Parsons, the relation to the cultural system, which is located on another systemic level, is even more relevant. Culture is the normative orientation scheme of social action constituting within the AGIL-scheme a system by its differentiated form the social system. Culture is a precondition for social systems. Normative cultural patterns are guiding the social systems. As the fiduciary systems have the tightest relations to the cultural system, they occupy a specific position in respect of the guidance of the social systems. In this sense, the university (as research and higher education institution) stands in the modern society in competition to the religion in legitimating society.

For the purpose of our study, this approach indicates that the relation to the economy system, which in the actual debate seems the most important one, is only one of the relations to have in view. Parsons & Platt considered more important the relation between the university and the cultural system.

### Figure 9: Institutionalization of cognitive rationality in the structure of university (adapted from Parsons & Platt 1973: 92)

<table>
<thead>
<tr>
<th>Knowledge “for its own sake”</th>
<th>Knowledge for “problem solving”</th>
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<td>The core of cognitive primacy (research and training by and of specialists)</td>
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</tr>
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<td>Training for professional practitioners (as “specialists”)</td>
</tr>
</tbody>
</table>

Source: Parsons & Platt 1973: 92
In a next step Parsons & Platt defined how the cognitive rationality is grounded in a general system. They took as basic components of their scheme the meaning structure of the system and on the other hand its value structure. By the introduction of the distinction between foci of cultural grounding and modes of articulation in operative action, they established again a 2x2 scheme. But for our proposal, the consideration is highly relevant that the higher education institutions and more especially the universities are focused mainly on one function of the highly differentiated social system: the cognitive rationality. It gives a criterion to analyse the complex role of the universities in modern society. “This rationality, is not absolute but must seen in relation to its articulation with other primary functions of the society” [Parsons & Platt 1973: 92].

The core function of the universities is focused on the system of rationality itself. That means, the provision of the system of rationality with new research results and to train specialist for academic professions: research and higher education. But this is only one of four primary functions. A second function is the provision of general higher education focused on “educated citizenry” [Parsons & Platt 1973: 53] making reference to a specific socialisation of the students through the academic life and the acquisition of “procedural norms for the conduct of intellectual discourses” [Parsons & Platt 1973: 155] and the patterns of scientific cognitive rationality. “He or she should be a person capable of a higher level of mobilization and utilization of cognitive resources in the solving of private and public problems of the society than would characterize persons with a lower level of education” [Parsons & Platt 1973: 94]. A third function is providing special competence to act in a professional field outside of the academic world generally in a client-oriented field [see Parsons & Platt 1973: 94]. The fourth function is related to the role of the academics or intellectuals in the society, more in concrete in the definition of situations. Parsons & Platt suggest conceiving the core function and the training of professional practitioners as a focus on specialization; meanwhile the two other functions are more generalist.

Professionality defines, in the perspective of Parsons, the role of the higher education in the modern society and is crucial for the modernisation process [see Stock 2005]. “The massive emergence of the professional complex, not the special status of capitalist or socialistic modes of organisation, is the crucial structural development in twentieth century” [Parsons 1968: 545]. However, professions are based on higher education establishing a hierarchy of knowledge in which the academic knowledge has a higher consideration then the knowledge acquired in the work processes and the vocational training.34 To highlight this difference of Parsons’ concept of professions to the general professions, we opt to use the term higher educated professions.

34 See the discussion on the work process knowledge (Boreham et al [2002])
Parsons considered that the output of the higher education system to the labour market is the value commitment to the intellectual discourse and scientific cognitive rationality. He distinguished two area of the professional commitment of higher educated professionals: a) the general competences oriented to scientific cognitive rationality and b) the more specific training in the cognitive and affective operation related to a professional area “to produce optimum labor-capacity for performing applied professional functions” [Parsons & Platt 1973: 261]. Stock [2005] claims the attention that Parsons related higher educated professions also to the “commitment to valued association” [Parsons & Platt 1973: 261]. The academic communities are seen as the paradigm of association, where the individuals are considered as equals. Authority is based on the intellectual discourse and the better arguments observing, however, established cognitive standards. Higher Education transferred this normative version of associations to the society generalising so a specific kind of behaviour, which is on the other hand the condition for a trustful relation between the academic worker and his clients. But the behaviour based on associations is also an alternative concept to the bureaucratic organisations based on hierarchies. “Academic pressure tends to favour the combination of universalistic norms with the egalitarian component of the collectively defined as company of equals” [Parsons & Platt 1973: 261]

In the opinion of Parsons, the higher educated professions form part of the educational revolution. After the expansion of the primary and secondary education, follows an expansion of the higher education conducing to a general access to higher education. This would have an affect of up-grading of the occupational structure converting higher education as a requisite for success in the labour market. This would produce a general increment of the general competences of the labour forces and would have its reflection in the organisation of the enterprises. The expansion of the higher education would produce an expansion of the associational pattern not only in the society (providing a citizenship and a higher degree of participation), but also in the economy, in the work organisation.35

Parsons sees the expansion of higher education as a driver of social change in society and economy. The generalisation of the primary and secondary education, and the expansion of higher education have provided still a cultural change introducing “new cultural standards, especially those embodied in the intellectual disciplines, are institutionalised in ways that partly replace traditional religion.” [Parsons 1971: 99]. In a more profane sense, Stock [2005: 84] interprets that Parsons predicted through his concept of professionalisation, in certain way, 35

“The professions have also been increasingly involved in business other areas of the private sector and government (...). The organisation has become more associational for its essential to secure cooperation of specialist without asserting sheer authority. Much of modern bureaucracy thus verges on the collegial pattern ... This collegial pattern modifying bureaucracy in an associated direction, involves membership roles that are occupational. [Parsons 1971: 103]
modern trends in enterprise management based on lean hierarchies and less bureaucratic procedures, but also trends in the labour market where the higher education certificates gains even more relevance.

Coming back to the core function of the universities, Parsons & Platt [1973: 106] highlighted that all members of the university – students and academic staff- are learners. Researching is per se a learning activity, in which the researcher is not learning only from other human beings, “but from or of the phenomena which he studies” [Parsons & Platt 1973: 106]. It can be added that also the teaching activity must be conceived as a learning activity, in which the teacher learns from the students or from the situations. In this sense, the distinction between teaching-research, on one hand, and teaching-learning, on the other hand, becomes secondary for the universities in front of the concern “with the encouragement, facilitation, and disciplinary evaluation of process of learning and their outcomes” [Parsons & Platt 1973: 106].

Parsons conceived the action systems as open systems. He distinguished between uni-functional system, which are reflected in the AGIL-scheme, and multifunctional system as enterprises, churches, family, schools and universities. Luhmann took Parsons’ concept of the uni-functional system as a starting point to develop his own system theory introducing a switch from the open system to a closed system approach (autopoietic systems) putting emphasis on the systemic communication processes. He sustains that the social systems are created by the codification of communication, which has is major expression in the constitution of binary codes and generalized communication means related to one specific function. Within this conceptual framework, Luhmann conceived education as a system by its own, which has the function to create specific habitat and transmit specific capacities applicable later in other functional systems [Luhmann 1990:194]. As other social systems, also education has a function to reduce the contingency of action. The contingency formula of education is cultivation (in German Bildung). “With the concept of cultivation, the educational system reacts to the loss of external (societal, role-based), binding points about what all human beings is or should be” [Luhmann: 2002: 186 translated by Lars Qvortrup 2005]. For the reduction of contingency, the fundamental is not the transmission of knowledge, but making human beings persons. Human beings are born meanwhile the persons are the result of the socialisation and education. Human beings are non-trivial systems, which are too complex to guarantee the coupling of communication (or social actions) [Luhmann: 2002: 38]. The unpredictable human beings must be converted in predictable persons to assure stable series of communication (social action).

Qvortrup calls the attention to the fact that the German term “Erziehung” includes upbringing and education. “The background for this is that “Erziehungsfunktionen” were functionally differentiated in the 18th and 19th century into upbringing and public education” [Qvortrup 2005: 5] Luhmanns deals with both terms. Following Qvortrup we will use here the term education referring to Erziehung.
Education is conceived as the trivialisation of non-trivial systems. This conversion has two aspects: socialisation, as an unintended process, and education, as intended processes.

The second function of the educational system is as well as other social systems the selection based on the distinction between acceptable and unacceptable behaviour. This allows the establishment of educational trajectories, but also criteria for the development of professional trajectories and life courses. In this sense, the differentiation of the educational system in modern society implies a change from the selection principles of social origin to merits. The human beings to be educated have passed by different socialisation processes before coming into the education system. They are different, but the educational system treats them as equal attributing differences in the educational trajectories as differences of personal talent or performance. The character of an autopoietic system induced that the differences produced in the system is attributed to the system itself [see Luhmann, N. & Schorr, K.E. 1996]

In his early works on education, Luhmann assumed that the educational system is, as other social systems, based on the basic distinction between code and programme [Luhmann 1990:194]. Through the binary code of the educational system sequences in the educational biography of the people are established. In other words, this binary code responds to the need to establish sequences of singular events during the interaction between the own selection and the selection of others. These established sequences provides, on one hand, the conditions, so that the event can happen, but on the other side it restricts structurally possibilities of communication [Luhmann 1990:195]. The binary code of the educational system is – in the opinion of Luhmann – the bionom “better – worse”, which is the basis of the internal selection process within the educational system, but also the means which allows the link to other social systems as for instance the economy (the labour market). However, the assumption that the code “better-worse” is the basic code of the education system introduces certain incongruence in the argumentation of Luhmann. He sustains that this code is symbolized by the marks, which are regulating the trajectories of the scholars within the educational system. But when Luhmann is talking about the connection to other system, he sustained that this interrelation is regulated by the certifications. This implies, in certain way, to abandon the theory of autopoietic systems, which is regulated by a specific code and symbol. This problem can be solved considering the certifications as the communication symbol of the educational system, in which is expressed the binary code of “approved – not approved” (or “apt or not apt”) to follow a specific

37 They are also socialized in different ways during their education.
38 The codification of the educational biography has without doubt effects on the general biography of the people, but at this stage, we limit this statement to the educational biography maintaining the discourse in the area of education.
39 Here we use the term “title” in a very broad sense including the annual school certifications or also certificates of training modules, which permits to step into another educational phase. We can also consider the credits of the European higher education (ECTS) as a kind of title, which certifies some learning achievements.
educational trajectory. The average marks incorporated in the certifications are then an additional selection mechanism.

The code of the educational system is a selection mechanism to create trajectories, but also to incorporate the challenges of the society as a whole and the other social systems into the communication process of the educational system [Luhmann 1990:198]. The binary code of the social system is stable in time and can’t change. Under the codes are the programmes, which provide the criteria to evaluate the educational trajectories based on the binary code. In spite of the invariability of the binary code, the underlying programme and the criteria of evaluation can vary in time and space. In this sense, social systems like education accomplish criteria of stability and flexibility at the same time. In the case of the educational system, the programmes are expressed in study and learning plans. On the other side, the code and the underlying programmes are symbolized in certifications. The titles are the symbolic communication means of the educational system as the money is the communication mean of the economic system. As the programmes also the symbols can vary in time and space.

But in the posthumous published work “Das Erziehungssystem der Gesellschaft” [Luhmann 2002] he abandoned the idea of a binary primary code in the educational system sustaining that the social systems based on the action of individuals on individuals as for instance medicine and education can’t be based only on binary codes. The binary code better/worse is relegated to the status of a secondary code and is substituted through the difference between transmittable/untransmittable. Meanwhile this difference is related to the primary function of the education system, forming persons, the secondary code is linked to the second function: the selection and the establishment of educational trajectories and life courses. This change in the conception of the education codification conduces also to a change in the relation between code and programmes. The absence of a clear primary code doesn’t allow the differentiation between code and programmes. Luhmann stated that the special character of the educational systems is that there is no clear difference between primary code and programme. The educational objectives and teaching plans cannot be conceived simply as programmes, which underlie a selection code.40

In spite of this conceptual changes in the posthumous publications of Luhmann on the educational system, which are related to the fact that the selection is relegated to a secondary function of education and the reduction of contingency is put in the foreground, the selection function is still fundamental in the linkage between the education system and other social

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40 Eine „Besonderheit des Erziehungssystems zeigt sich auch darin, daß es hier anders als in anderen Funktionensystemen keine klare Unterscheidung von Codierung und Programmierung gibt .... Die Erziehungsziele, die Unterrichtsstoffe usw. lassen sich nicht als Entscheidungsprogramme des Selektionscodes begreifen. Sie erschöpfen sich nicht darin, Direktiven für richtiges oder falsches Zensieren zu geben, sondern sind die unmittelbaren Funktionsträger des Systems.” [Luhmann 2002: 74]
system. The secondary code – apt or not apt – symbolised in the educational certifications doesn’t establish only educational trajectories. It is also a value input for other social systems for example in the designing of professional trajectories and the distribution of social prestige. The autopoiesis of the educational system implies also a homogenisation of the pupils at the beginning of each education phase. The difference in the results of each pupil is tendencially attributed to his talent or performance. The autopoietic communication processes of the modern educational system put forward the principles of meritocracy, as its primary function is the equal forming of persons. The achievement of equal social opportunities is a political goal, but not a primary educational goal.\(^{41}\) The orientation of the educational system to the principle of meritocracy is related to the period of the differentiation of the educational system, when the merits are used to defend the interest of the bourgeoisie to occupy position of influence in the public administration and to upgrade their social prestige. The application of the principles of merits implies that the education considers the pupils as equity at the beginning of their educational career so that the progress in their education career can be assigned only to the personal efforts and achievements of the individual.

The theoretical work of Luhmann gives indications of the difficulty to achieve equality of opportunities through education. P. Bourdieu worked on this problem in the 1970’s and 1980’s discussing the effects of the educational expansion on the social mobility through the case of higher education underpinning the relevance of cultural capital for the individual educational trajectories. Accepting the inherent principle of the education system of selection, he asked if the principle of meritocracy and equity of opportunities is achieved and how it can be achieved. Bourdieu framed “cultural capital” in a wider capital theory. “A capital is any resource effective in a given social area that enables one to appropriate the specific profits arising out of participation and contest in it” [Wacquant 2006]. Bourdieu distinguished three main types of capital, which defines the position of an individual in the society and the specific fields of social action: economic, cultural and social capital. Cultural Capital is a mean to stratify society and to establish differences. The position of the individual in the society and a specific social field can be analysed using two coordinates: the composition of the capital stock and the overall volume. Also the variation of the capital in time must be taken in consideration. As the economic capital cannot be reduced only on the monetary capital - it includes also other kinds of property rights – the cultural capital has different forms. It is composed by heterogeneous elements related to the knowledge about and use of arts, literature and music and specific types of behaviour. “Cultural capital is capital ‘embodied’ in individual dispositions and competencies that give privileged access to such capital in its ’objectified’ form of cultural artefacts, and that is in turn

\(^{41}\) En un sentido muy general, el sistema educativo puede ser pues entendido como un proceso de reforzamiento de la desviación (social)
institutionalised in criteria of cultural, including academic, evaluation and thus ultimately in educational qualifications that also provide returns to their holders” [Goldthorpe, John H. 2007]. Jeannotte [2003] stated that cultural capital consists in its simplest terms “of three elements: (1) embodied capital (or habitus), the system lasting dispositions that form an individual’s character and guide his or her actions and tastes; (2) objectified capital, the means of cultural expression, such as painting, writing, and dance, that are symbolically and transmissible to others; and (3) institutionalised capital, the academic qualifications, that establish the value of the holder of a given qualification. [Jeannotte 2003; see also Bourdieu, 1986].

Cultural capital is transferable through the socialisation process within the families. This capital is tightly related to the family background and influenced in a high degree the possibilities of a pupil to obtain educational certification. The educational certifications symbolize the possibilities to access to material and immaterial resources and contribute to determine the social status of the individual. In this sense, cultural capital is not an individual good but a collective good of a family or a specific class used to reproduce the social status. It is the main vehicle of the social reproduction. Bourdieu described cultural capital as the investment of the dominant class in reproducing a set of symbols and meanings, which are considered by them as their own. [Goldthorpe 2007] The obtained social position in the society or specific social fields “inclines agents towards particular pattern of thought and conduct: those who occupy the dominant positions in a field tend to pursue strategies of conservation (of the existing distribution of capital) while those relegated to subordinate locations are more liable to deploy strategies of subversion. Established member have a vested interest in preserving the existing order and criteria of judgement, new entrants an interest in challenging them” [Wacquant 2006: 8]. Cultural capital, as the other capital forms as well, is open to be converted in some extend in other capital forms. “Thus, for Bourdieu, it is the combination of institutional control over forms of capital together with processes of conversion and transmission that is crucial to the capacity of dominant classes to maintain their position – and therefore to social reproduction overall. The generalisation of the concept of capital provides the basis for an understanding of how dominant classes are able to extend and reinforce their power and privileges over all social domains, or “fields,” alike and over time.” [Goldthorpe 2007]

The cultural capital is, in the perspective of Bourdieu, an objective of the struggle between social classes or interest groups. Interests of social classes and social groups influence the educational system. Educational merits as results of the individual talent and efforts go to short to establish the equity of opportunities. The financial support of less favoured social groups in the access to education is insufficient to achieve social equity. It is not only the access to the educational programmes also the programmes; with their affinity to the habit of certain social
classes [see Bourdieu, Pierre & Passeron, Jean Claude 1971: 41] determine the possibilities of educational success. Within their educational trajectories, the pupils must acquire knowledge and techniques, which are never totally free from social values and norms of the cultural elite. The children from lower and lower middle class must make a higher effort to acquire these knowledge and techniques. In this sense, education is, in the opinion of Bourdieu, a process of acculturation [see Bourdieu & Passeron 1971: 40].

Similar to Luhmann, Bourdieu stated that the modern educational system is not contributing to the achievement of equal social opportunities due to its internal logic. The internal logic of the educational system – homogenization of the pupils at the beginning of each educational period, the principle of educational meritocracy to design the educational trajectories and the design of the learning programmes oriented on the cultural standards of the dominant class – contributed to the maintenance of social privileges. Programmes of financial support for the access to educational opportunities or the creation of specific learning programmes do not change this logic of exclusion. These types of programmes probably achieve the formal equity of the different social groups, but not the internal logic of the educational systems. These types of financial programmes reinforce on the contrary the meritocratic discourse attributing the systemic failures to the individuals to be educated or trained [see Bourdieu & Passeron 1971: 44-45]. If the goal of an educational system will be formulated in the sense of the achievement that an maximum of individuals can acquire in a minimum of time a maximum of competences, which at one determined moment of the educational trajectory signifies a academic certifications, the educational programmes must be changed in the whole line of the educational system. This exigency towards a democratic educational system stands, however, in contradiction to the traditional orientation of the educational systems in occidental societies focused on the formation and selection of the elite of the dominant classes. The corresponding changes wouldn’t require only structural and financial changes in the system. They require overall changes in the pedagogical orientation of the system [see Bourdieu, Pierre & Passeron, Jean Claude 1971: 90-91]

1.4. The social function of higher education in the European knowledge society

This brief excurse on how sociological theories conceive the function of higher education provides us with indicators for the analysis of the higher education within the European knowledge society, its social model and in the prevention against new social risks.

a) From the sociological point of view, the primary function of education is to contribute to the reduction of double contingency through the forming of persons in the area of general education and training in the area of professionalization. For this reason, education is not
primarily oriented on the transmission of knowledge, but on the transmission of standardized behaviour and culture in the Parsons’ sense of normative orientation patterns. Higher education is more especially oriented on the transmission of behaviour based on scientific cognitive rationality.

b) **Education is oriented on typified culture standards of the society.** In these cultural standards are incrusted the different interests of the social classes. Although culture reflects in a complex manner the interest of the social classes, the cultural standards of the dominant class are predominant. In this sense, the cultural capital of the children of the cultural dominant class transmitted by the family brings them in better starting position to achieve success in their educational trajectories. However, this is not a static situation. Also the culture is object of the struggle between the interests of different social groups. The gender mainstreaming can be considered as a successful example to change the cultural orientation.

c) **The higher education forms part of the fiduciary system providing scientific rationality to the general action system.** This doesn’t mean that higher education is intrinsically linked to research, but it is based on the same principles of rationality and it is oriented to the transmission of rationality as a form of social behaviour. This is the essential contribution of the university and the higher education to the constitution of the modern European society.\(^{42}\) The scientific rationality is one of the essentials of the European society contributing to its integration.

d) The increasing relevance of the principles of scientific cognitive rationality has its expression in the Parsons’ concept of higher educated professions. Two competence complexes constitute the higher education professions: the general competences to the scientific cognitive rationality and the specific competences to the concrete professional field. Additionally, the higher educated professions are related to a specific form of behaviour (the associationism). The expansion of the higher education and the corresponding behaviour based on scientific rationality can be considered as one of the driving forces of change in the work organisation in the industrialised societies, but also in the modern societies.

e) **The education system accomplishes the function of social selection based on the binary code “apt or no apt”**. This code serves to design the varieties of educational trajectories as well as the pathways to other social systems. This code and its symbolisation in certificates and titles are relevant for the access to professional opportunities and so for the social design of

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\(^{42}\) Rationality is not the only characteristic of the modern society, but one of its main characteristics. Also, the modern society is not a rational society at all, but the rationality is one of the main distinctions in comparison to the ancient societies.
professional trajectories. This selection mechanism has also a function for the delimitation of social fields defining social prestige contributing to the social stratification of the societies.

f) Credentials have an important function in the design of social trajectories or biographies. From the 18th century on, education has been the vehicle to impose the interest of the bourgeoisie against first the European aristocracy and later against the working class through the principles of merits. The education systems follows the discourse that the educational trajectories must be established based on the merits of the pupils recognizing that the influence of the social environment must be reduced. This has its expression in political programmes to support education of less favoured social groups e.g. financial support. It also implies recently to open the educational pathways conducing to higher education.Implicitly it is assumed that access to education would contribute to open the professional and social trajectories.

g) From the beginning of the constitution of the modern higher education system on, the higher education is characterised by its constant expansion in numbers of students. Higher education has been in its origin en elite education passing to mass higher education and advancing now to a general higher education. This expansion process has been accompanied by an increasing horizontal (for instance between vocational and academic orientation) and vertical diversification (for instance constitution of elite universities). The diversification as well as the phases of access restriction can be interpreted under the perspective of social struggle on life course opportunities in the sense, that the privileged social groups are defending their social status.

h) Modern higher education is oriented to the provision of high-qualified workforces for the public administration and public services as education, health services and public research. In the last decades, a retrenchment of the public graduate labour market can be observed, which is accompanied by a growth of the private labour market. These increments the pressure to diversify the programmes of higher education in coherence to the more diversified labour market segments for graduate workers and incrementing the pressure to reinforce the vocationalism in higher education.

i) The policy strategy to promote the knowledge economy based on high-qualified workforces concedes high relevance to higher education as one of its main pillar. The objective is to increment the active population with high education credentials. This trend will reinforce the above-mentioned trends to diversificate the higher education on the vertical and horizontal line. The Bologna process generalising the three-cycle design of higher education can be interpreted as part of this diversification process as well as part of the process to vocationalize higher education.
j) Higher education as a social system is overlapping with the social system of science. This has its expression in the structure of higher education institutions. They are organised on the line of the disciplines and subdisciplines. It is also reflected in the fact that the academic titles are tightly related to the segregation of science in disciplines and subdisciplines. But higher education must also respond to the requirements of the economic system (labour market) and to the society. In this sense, the design of the academic titles and certifications is not following at all the structural lines of the science system incorporating academic titles in response to the challenges of the labour markets, and elements (knowledge, abilities and competences) going beyond the requirements of the science system.

k) The on-going expansion of higher education produce changes in the graduate labour market opening new segments for high-qualified workforces. This is accompanied – within the process of flexibilisation of the labour markets in general – by an increasing uncertainty and segmentation in the labour market. Also taking into account the socio-cultural changes in the European societies (demographic changes, changes in the family structures and cultural values), the (new) social risks for the graduate workers can be considered as increasing.

l) Higher education – in the sense of forming and training persons for the reduction of contingency - is not limited to one determined life period. It is open to the whole life-course of the individuals and must be focused on learning to learn. Higher education has a function in a social model preparing the students to the challenges of the society and especially the labour market not only in the initial phase but also in the phase of continuous adaptation. In a period of instable labour market: entrée, leave, re-entree for different reason, the function of the higher education is to promote further training to increment the re-entree chance for unemployment, sabbatical periods, parental leaves, care leaves, sickness leaves, pension leaves etc. This implies also a regular check of the concrete needs of the students and the labour markets.

m) Higher education systems are focused on learning. Not only the students are learning in this system, but also the lectures. Learning can be conceived as a social practice, in which all involved actors are changing in the course of the learning process. Also the research activities linked to higher education can be conceived where the researchers are learning from or of the phenomena and/or through the interaction with other researchers. However, Luhmann’s distinction between socialisation as an unintended process and education as an intended process indicates that education is an interaction based on personal contact.

n) Conceiving higher education and an interactive process based on personal contacts implies at the same time to conceive it as a teaching process. Learning from another person means that this other person is transmitting knowledge or patterns of behaviour. He or she is teaching. However, the assumption of learning as an interactive process indicates also that the roles of
teacher and learner can change in the process. The teacher can convert in some moments of the learning process in learner and the learner in teacher. This complex and changing situation is more obvious in situation of group learning. But in an institutional setting as the higher education the roles of teacher and learners are formally defined. But in an open environment of higher lifelong learning, where the academic “teachers” are confronted with professionals from different fields, this formal relation looses relevance. The professionals have acquired in the course of their professional life all kind of experience (knowledge, skills and competences) to which the academic staff hasn’t had access easily. In other words, the informal relation between “teachers” and “learners” tends to be more open then in the phase of general higher education. This implies also another conception of the teaching-learning process then in the initial phase of higher education.

1.5. The NESOR-Research programme

On the background of the above-explained consideration, the research developed within the NESOR-project focused on the social function of higher education in the European knowledge society. The project concretised the issue of social function through the approaches of (new) social risks and the transitional labour markets.

![Figure 10: Driving forces of socio-economic changes](image)

The point of departure has been two key terms of the Lisbon strategy as the main policy of the EU in the last decade: knowledge economy/society and the new European social model. It is widely know that the Lisbon strategy has declared the objective to convert the EU in the most
competitive knowledge economy generating more and better jobs and greater social cohesion. Taking into account the increasing uncertainties in labour market of the globalised knowledge economy and the socio-cultural changes of the EU-society, the EU proposed to reform the European social model and to advance to a new social model. To mitigate the social risks, which are accompanying the globalised knowledge economy, and to promote social equity a new European social model is promoted based on the principles of activation improving the employability of the EU-workforces. In the area of education and training, this general policy is promoted by the strategy of lifelong learning. That means the preparation for the labour market isn’t an affair of a specific life course phase (initial education and training) but a process inserted in the whole professional life course. This implies a conceptual switch form the paradigm of teaching to learning.

![Figure 11: The magic Triangle of the New European Social Model](image)

The Lisbon strategy advocated a) for scientific and technological innovation as the first main competition factor of the EU-economy and b) in consequence for qualified and high qualified workforces as the second competition factor of the EU in the globalised economy. Coherently, higher education is perceived as one of the key elements of this strategy.

On the other side, to achieve social equity is considered as one of the main goals of the European social model and of the Lisbon strategy. In this context emerged then newly the question how the higher education contributes to the achievement of social equity and to the mitigation of social risks.

Against this background, the NESOR-project wants to contribute to the discussion of the social function of higher education in the European knowledge society contrasting a) political and
social science concepts, and b) European discourses and national discourses, and describing policy development in the participating countries.

The project starts from the assumption that higher education isn’t only a tool to adapt the workforces to the challenges of a changing economy. On the contrary, following Parsons & Platt [1973], the project conceives (higher) education as a driving force of socio-economic change.

This assumption conducted to ask for the background of the actual guiding visions of the policies in the EU and its member states. The NESOR-project focused on the concept of knowledge economy/society. Taking into account that under this label, different concepts as information economy/society, network economy/society, learning economy/society and knowledge economy/society are discussed the question came up:

- Which is the leading vision at the discourse of the EU-policy?
- What are the leading national discourses?
- Which function is assigned to higher education within these discourses? And
- What are the main challenges of higher education in the transition to the knowledge economy/society?

In a second step, the project asked for the European social model. It is evident, that the EU is promoting a social model based on the principle of activation. This model conceived social policy, economy policy and employment policies as part of a “magic triangle” to increment the socio-economic competitiveness and to achieve social equity of the EU. In this triangle, education and training occupies a prominent place as activation is conceived as the improvement of the employability in the whole course of the professional life of a person.

In this concept, (higher) education has the function to improve employability, to reduce the existing qualification gaps, to promote lifelong learning, support the transition from the industrial to the knowledge economy/society, to promote equal opportunities for the European citizens and to reduce (new) social risks.

Conceiving the “New European Social Model” as political strategy, the question came up, if a European social model exists. Social science discussion in turn around of the welfare regimes but also of the varieties of capitalism shows the existence of varieties of social model within the European Union.

Against the background of the social science debate on social model, the project asked for:

- Which is the leading vision in the EU-discourse on the social model?
- What are the leading national discourses?
- Which function is assigned to higher education within these discourses? and
What are the main challenges of higher education in the modernisation of the social models

Special attention would be paid to the social risks. Connecting to recent debates on new social risks and transitional labour market, the project asked for the changes in the graduate labour markets. Within the globalisation process, the European labour markets have been submitted under a process of flexibilisation incrementing the uncertainty in the labour market and the number of a-typical work relations. For this reason, the NESOR-project asked especially a) for the national discourse on social risks and which are the main social risks in the perception of the national discourses, b) in which degree the graduate labour market are affected by the incremented uncertainty and the growing social risks and c) if a function to mitigate the social risks is assigned in the policies to higher education.

Last but no least, the project asked if the detected challenges for the higher education has an impact on the didactical discussion in the higher education systems. The Lisbon strategy and the Bologna process signify great challenges for the higher education system promoting a) a paradigm shift from teaching to learning and b) widening the access to higher education provisions. Assuring the efficiency of the reforms not only in terms of access but also in permanence in higher education (input – output relation) requires not only a debate about structural reforms but also contents reforms. In so far, the project asks for level of didactical innovation within the actual reform processes to mitigate social risks and to improve the social equity in higher education.
2. The European knowledge society on debate

The future of higher education
in the European knowledge society

Insights on the European and national debates on
knowledge society and higher education
In the debate on the knowledge society different concepts as for instance information society/economy, network society/economy, learning society/economy and knowledge society/economy have been developed. These concepts are used differently in the social sciences and in the polity area at the EU-level and in the member states. These debate areas are frequently crossed, but many of evidences provided by the social science are not forming part of the political debate. To avoid confusion in the further analysis, first the different social science concepts will be discussed and then the political strategies labelled under the term “knowledge society”.

The scientific discussion of the concept of the knowledge society has two main strands, which have however common origins. On one side, we have the sociological discussion about the transformation of the industrial society and its socio-economic causes and consequences. On the other side, in economic science these concepts have been discussed under the perspective of the change in the economic area including the work organisation. Both discussion strands are often overlapping.

Will review first the social science concept of information society/economy, network society, knowledge society/economy and learning society. Later, a brief overview of the EU-strategies headed under the label of knowledge society/economy will be presented. Then we will give insights into the national debates about the knowledge society covering the countries, which are participating in the NESOR-project (Austria, Italia, the Netherlands, Poland and Spain). At least, we will discuss briefly if we can really talk about a European knowledge society. The role of higher education in the European knowledge society will be discussed in the chapter about the European social model.

2.1. The social scientific concept

It is difficult to re-produce a clear-cut review of the discourse on the knowledge society/economy, due to the lack of consent both in the notions and their contents. A review of the literature provides a great variety of terms concerning the knowledge society/economy. The most often used terms are the followings: information society, knowledge society, learning society; network society or information economy, knowledge economy, new economy, network economy, learning economy. In spite the great number of terms, it is necessary to classify the various approaches aimed to describe the characteristics of the emerging new type of economy
and society. The following exposition is focused on “information society/economy”; “network society”, “knowledge society/economy” and “learning society”.43

2.1.1. The information society-economy

The term information society has came up in the European public discussion as a response to the initiative of the Clinton/Core government in the United States of America (USA) to create information highways by which the government wanted to prepare the way of the US-society to the information age. The term was still then well known appearing frequently in political programme in the past. It has its origin in the social science debate of the 1960’s about the modernisation process and its consequences. Geographically, this concept has its origin in the USA and Japan. Duff [2000] distinguished three main strands:

1. The approach of the “information flows” as it has been developed in Japan. The concepts of Jôhô Shakai’ (‘information society’) and Jôhôka Shakai’ (‘informationalised society’) expressed, on one side, the assumption that the process is more important then the definition of the society to which somebody wants to arrive. On the other side, these concepts didn’t put the weight on the production or distribution of the information technologies, but on the real use of the information as the crucial aspect of the future society. In the emerging society, the information will be segmented and focused on the specific needs of the people. That implies, in certain manner, to let behind the technological determinism, which dominated this research field, and put the use of the technology in the foreground.

2. The information sector approach goes back to the work of F. Machlup’s [1962] titled “The Production and Distribution of Knowledge in the United States”. Machlup himself hasn’t used the term information society, but he has been the first to call the attention of the increasing weight of the information sector for the US-American gross domestic product. This work has been later the starting point for Marc Porat [1976] to elaborate his concept of the information economy. Daniel Bell’s analysis [1973] of the post-industrial society appointed in the same direction as Machlup. In spite of the difference, these and other authors stated profound changes in the occupational structure and the structure of economic sector –industrial decline and growing of the service or information sector – giving place to talk about a new type of society.

3. The information technology approach takes as its starting point the technological development. The so-called information revolution is the driving force of the socio-

43 As the authors are coming from the academic field of sociology, we preferred the term information society and knowledge society considering these as broader concepts, which discussed as well the socio-economic causes as well as the socio-economic consequences of the transformation processes.
economic transformation first of the advanced industrial society and later of the other societies. The progress in the treatment, stocking and transfer of information produced profound changes in the social-economic structures and processes. The “globalisation” for example is a product of the incremented capacity of information transfer all over the world.

The basics of the information society have been developed parallel in the United States of America and Japan in the 1960’s. In the USA Machlup [1962] and later Bell [1973] provided conceptual frameworks to explain the changes in the economic structure of the modern society and the incrementing weight of the economic sectors dedicated to the generation, distribution and evaluation of information. The economist Machlup used an industrial approach to distinguish the information sector from others using as indicators the sectoral participation in the gross domestic product and the occupation structure to measure the importance of the knowledge workers. In the area of occupation, Machlup distinguished between producers of information and information users referring to these professions which tasks consists overall in the use and distribution of information. He concluded a) that the information sectors have grown in the analysed period from 1947 to 1958 over proportional in relation to the other sectors. He distinguished 5 knowledge sectors: education; communication media; information machines; information services; and other information activities, including research and development. These sectors are very broadly defined. For instance, the sector of communication media includes the production of books, newspapers, journals, radio, television, telephone, telegraphy, post but also organising all types of conferences. Another example is the sector of information services including laws, insurance, medicine, but also negotiations of the car sellers and of a banker with the clients, and the whole public administration.

Machlup also observed that b) the proportion of knowledge workers has grown even more in the analysed period from 1900 to 1959 so that this type of work signified at the beginning of the 1960’s around 43% of the active population. Also in this area he used a very broad definition of knowledge workers: “If their product is a message, a piece of information, anything primarily designed to create an impression on someone’s mind, they will be included among knowledge-producers, even if their own mental equipment is relatively poor [...] Under this set of rules, the insurance salesman and the mail clerk are in the class of knowledge-producers, but dentists and veterinarians are not” [Machlup, 1962, S. 383].

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44 Machlup didn’t use the term “information society. Later Bell introduced this term to develop his conceptual approach, but discarded it in favour to the term post-industrial society.
45 “We strongly suspect that the share of knowledge-production in GNP has been in-creasing over the years. Indeed we can show that in recent years knowledge-production has been growing faster than GNP, and this implies that its share in GNP has increased” (Machlup, 1962, S. 362).
46 “...telling anybody what he should do means creating knowledge in his mind” (Machlup, 1962, S. 344).
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The work of Machlup presented series of methodological and conceptual problems, which are described before through the examples of the imprecisely definition of the sectors and occupation related to knowledge work. In spite of these difficulties, his work has been very influential in the discussion of the socio-economic change and the new status of knowledge in the society.

A few years after Machlup, P. Drucker [1968] argued in a similar way, but from the management point of view. Drucker postulated that the economy shifted from a manual to a knowledge basis. The future economy will not turn around the production of goods but of knowledge. “The impact of cheap, reliable, fast and universally available information will easily be as great as the impact of electricity.” [Drucker 1968: 27] This change isn’t so much related to the use of technology. It is the effect of the efforts to increment the productivity of knowledge work, for instance the management tasks. In the opinion of Drucker, the central question is how the management can integrate highly qualified and specialized knowledge workers in one organisation, so that they are productively working together. In other words, the transition to an information society is a management problem to be resolved in the organisations. Management knowledge must become productive using the knowledge to organise the work of the knowledge workers, making their work more productive.

At the same time, the Japanese Tadeo Umesao [1963] described in his article "Jõhô sangyô ron" (About the information industry) the social transformation in analogy to the evolutionary transformation of the nature He classified the activities of the society in three categories: agricultural, material and spiritual industries. In the category “material industries” he includes economic activities related to material and energy. And the category of “spiritual industries” includes all intellectual activities. These three categories have an analogy to biological organisms. The agriculture accomplishes the function of digestion, the material industries the function of mobility and the intellectual industries is linked to regulation and guidance. The degree of evolution can be observed through the relation between these three functions. During the evolution, the importance of the muscles (mobility) increments first and then the brain activity (regulation). Analogical the different functions are gained more or less relevance in the evolution of societies. First was the transition from the societies based on the production of food to a society based on the mass production of goods and energy. Now we are facing, in the opinion of Umesao, the transition towards the mass production and consume of information and knowledge, which is characterized by the growing weight of intellectual and cultural activities. For this reason, alls the economic sectors, which are focused on activities analogue to the activities of the brain and nerve systems of the organisms will experiment significant growth. In 1968, Kôyama Ken'ichi (Jõhôshakai ron josetsu" -Introduction to Information Society Theory-in Bessatsu Chûô Kôron Keiei Mondai) took this concept as a reference and linked it to the
concept of Bell about the post-industrial society. He developed a wider concept proposing the use of the term *jōhô shakai* (information society) instead of post-industrial society. The information society emerged from the industrial society and is characterized by the information revolution and the central place of information in the economic and social processes (Hensel 1990, 48). In 1964 Youichi Ito also has used the term “Jōhô Shakai” in an article in the journal *Hoso Asahi* (Rising Sun Broadcasting) (see Youichi 1991). And Yoneji Masuda has published in 1968 a work under the title *Introduction to an Information Society (Jōhô Shakai Nyumon)*.

In 1969; in his book “*Jōhôka shakai: hâdo na shakai kara sofuto na shakai e*” Hayashi (1996) distinguished between the “use value”, which is pure functional, and the informational value of economic goods, which goes beyond the functional use of the goods. Some goods as for instance petrol, gasoline or basic food has high functional, but low informational value. On the contrary, goods like cars, clothes, cosmetics, books etc. have a high informational value, providing indications of the social status and the personality of the owner or user. Based on this distinction, Hayashi argued that the information society is a society in which the goods are even more personalized and in which the informational value of the goods increments, generally spoken. In the information society, the economic value of a good is not so much determined by the productions costs calculated based on material and labour costs. More important are the incrusted informational costs (design, research and development etc.) and also the correspondence of the goods to psychological and emotional needs of the consumers. In other words, the product circulation is more determined by modes, styles and the quality then by the basic functional needs of the consumers.

These arguments around the information society conduced to the perception of the end of the mass production. Takeuchi Kei argued that the actual relevant sciences and technologies are quite different to the traditional sciences and technologies. The technologies of the industrial society are large technologies with large installations as the steel industry, the petrochemical industry and the car industry. The research projects are large projects as the Manhattan project, the Apollo project or the programmes of nuclear industry. They are focused on material, mass and energy. Micro-electronic, and biotechnology are examples for the new type of research, which is focused on information -based on the perception of differences- and the coordination and regulation of systems. This is linked to the principle of quality, differences and variety. The large technology or mass technology will not be completely substituted, but the new technologies - de-mass technology - will follow a quit different pathway with effects on the social organisation of societies. Mass technologies require a mass society that means strategies

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of mass management and control; and imply a concentration of human and financial capital and power.

The new technologies do not need these structures of mass management and control. The size isn’t so important for the computing technology. More relevant are the market-based competition, liberty of movement, action and speech. That induced a change of the structure of societal management and control. The society transformed - accompanied by conflict and contradiction - to a de-massed society based on variety. The growing relevance of information for the society will influence also the theories of society and economy conducing to a diversification of rationalism. The industrial society was characterized by on concrete type of rationalism: the mathematic and mechanical way of thinking. The information society will be, on the contrary, characterized by a variety of rationalism, which can be confused with irrationalism.

The above mentioned publications are framed in the strong governmental programme started in the 1960’s by the Japanese Government to gave impulse to the modernisation of the Japanese economic with the objective to shorten the distance to the USA. In 1969 the Japanese government published two reports on the information society.\textsuperscript{49} The first one about themes and visions of the Japan's Information Society with a diversification of demand, the growth of the offer of consume goods, the computerization of commerce, finance and production and a significant growth of the computer industry including the software industry. The second report about policy option promoting the informatisation of the Japanese society conceived the informatisation as a revolution within the existing socio-economic system not as the industrialization, which has act against the agricultural based system. The informatisation will provide people with trustful information, reduce the administrative tasks and strengthen the human creativity.

In 1971, the Japan Computer Usage Development Institute (JACUDI) presented the MITI a report titled “The Plan for an Information Society: a National Goal Towards the Year 2000”. To prevent a economic crisis, the report argued in favour for the computisation to increment the stock of information and knowledge in stead of investing in the construction sector or the leisure sector: This is the main road to prevent potential crisis as for example a lack of skilled workers, the increase of the information gap, ecologic disasters, traffic problems and overpopulation.

To promote the informatisation, the report proposed an education programme directly focused on the information society. At the time of the realisation of industrialized society through the industrial revolution, creation of demand for industrial goods depended only on purchasability.

There was no problem on the human side. So long as the goods produced were needed, they satisfied the human desire to possess them. However, use of information will find its value only along with the improvement of human intellectual creativity. In this field, theoretical thinking, self-control, and development of new abilities are required. Thus, the development of a computer mind in the people's mind has been established as an immediate target of this plan.

This brief overview about the first phase of the concept development indicates that, at this stage of the conceptual development, the information society isn’t so much technology driven. It is socio-economical driven by the long-term changes in the GDP-structure and the occupational structure. The Japanese scientist as well as Machlup perceived a change in the economic and occupational structure of the industrial societies. The increasing weight of the sector related to information generation, distribution and use is presented as a fundamental change in the configuration of the societies. This socioeconomic transformation is also observable in the changes products demanded (from functional to informational value).

The tight interrelation between the theoretical development and the political strategies is worth noting overall in the case of Japan. This interrelation conduced here in the following years to the development of methodologies to measure the information flow in the society through the index construction. The objective was to measure and confirm quantitatively the changes in the occupational structure, the technological change in the field of information and communication in the different societies. But the term information society competed in the following years with other concepts brought into the discussion by other social scientist as for example Toffler (the third wave society) and Bell (the post-industrial society).

The concept of the information society received a new impulse in the 1970’s through the work of Parot [1977] analysing the information economy. The OECD e.g. takes the developed methodology as the starting point for comparative country studies about the informatisation of the societies [see Nora/Minc 1979). For his study for the US-Ministry of Telecommunications, Porat [1977] took as reference the work of Machlup. He based the concept of information economy on two main definitions. First, information is “data that have been organized and communicated.” Second, information activities are this kind of activity which includes all “the resources consumed in producing, processing and distributing information…” [Porat 1977: 4]. Porat distinguished between two main domains:

a) the first one; the non-information sector, “is involved in the transformation of matter and energy from one form into another” [Porat 1977:4].
b) the other, the information sector, “in transforming information from one pattern into another” [Porat 1977:4] This domain is the core of the information society. This domain by itself is divided in two areas: information and information areas.

Measuring the changes in the weight of these domains for an economy provides the indicator to talk about an information economy. To measure this change, Porat used only the statistics of the national income accounts. For the statistical analysis, he divided the information sector in a primarily and a secondary information sector (PRIS and SIS). The PRIS refers to all the business activities involved in the exchange of information goods and services in the marketplace like mass media, education, computer industries and advertising. It includes "industries that in some way produce, process, disseminate, or transmit knowledge or messages. The unifying definition is that the goods and services that make up the primary sector must be fundamentally valued for their information producing, processing, or distributing characteristics.” [Porat 1978: 8].

Porat considered that also several activities carried out in other sectors could be classified as information work as for example research activities in industrial sectors. Nearly every enterprise or organisation is producing, processing and distributing information for its internal use. The SIS “includes the informational activities of the public bureaucracy and private bureaucracies. The private bureaucracy is that portion of every noninformation from that engages in purely informational activities, such as research and development, planning, control, marketing, and recordkeeping. …The public bureaucracy includes all the informational functions of the federal, state, and local governments.” [Porat 1978: 8].

Based on these definitions, Porat analysed the national economic statistics re-aggregating categories. He came to the conclusion that around 45% of the Gross National product of the USA is generated by the two information sectors and half of the labour forces are working in information related work places. For this reason; the USA is an "information society (where) the major arena of economic activity are the information goods and service producers, and the public and private [secondary information sector] bureaucracies.” [Porat 1978: 32].

Porat’s classification scheme has been criticised substantially. Bates [1995] and Dizard [1984] considered the categories too broad to be meaningful. Webster criticised this approach for the “hidden interpretation and valued judgement” [2003: 1341], which are behind the construction of these categories. As Machlup, also Porat constructed a category “information sector”, which overestimate its economic weight. The problems of Machlup’s categorization have been discussed before, but Webster [2003], observes similar problems in the approach of Porat. For instance, defining the SIS, Porat proposed to split the industry in informational and non-informational activities and to account them separately. Webster found it hard to accept such distinction exposing the examples of operation with NC-systems or line management functions,
which are not clearly assignable to one of these categories. A second difficulty, which emerged still in Machlup’s approach, was the homogenization of disparate activities in the broad category of information sector. It is hard to accept that such diverse activities like researching, advertising, banking, manufacturing computers or cameras or public administration can be aggregated to one broad category without taking into account there different impact on the society. In the same line argued Bates [1995] noting that based on Porat’s approach factory worker assembling information transmission equipment has the same status as university researchers. Another problem mentioned by Webster [2003] is the missing clarification from which moment on, we can talk about an information society. For instance, we are consideration a national state as an information economy if the information sectors are generating 40%, 50% or 60% of the GNP? In spite of the debate over Porat’s categories, it was widely accepted that the USA was at the end of the 1970’s already an Information Society. His study became one of the key elements in the discussion of the transformation of the modern society. Other social scientists, as for example D. Bell [1979], started to rearticulate their work using computerization and information as key words. Bell’s concept of the post-industrial society argued in the same line as Machlup and Porat observing a change in the social-economic structure of the US-society through the growing weight of the service sector and the non-manual work. But he made a step forward affirming that in the emerging society the theoretical knowledge would become the axial principle. The technologies would play a central role and – in the line of Drucker – new decision making processes would appear. Bell recognized, however, that knowledge has always been a central for each society, but in the post-industrial society, the character of knowledge itself is changing. The theoretical knowledge became the essential knowledge type in the post-industrial society. 50

The development of the concept of information society was based on the empirical analysis of the structural change in the economic and occupational structure of the US-society. In the background swings the argument, that the socio-economic changes have one but not the only driving force in the technological innovation. The Japanese development of the information society is a good example, that the general social changes, expressed in the demand of more personalized products, are perceived as factors conducted to the information society. Also Bell focused on another fundamental change in the society: the increasing relevance of theoretical knowledge to coordinate social processes.

50 “What has become decisive for the organisation of decisions and the direction of change is the centrality of theoretical knowledge – the primacy of theory over empiricism and the codification of knowledge into abstract systems of symbols that … can be used to illuminate many different and varied areas of experience. (Bell 1973: 211)
This perception changes in the course of the 1970’s and overall in the 1980’s with the growing implementation of ICTs not only in the work but also in the day-to-day life of the occidental society. The technological innovations are now step by step perceived as the main factor of socio-economic change. For example, Nora & Minc [1978] introduced the term informatisation (or computerisation) in France publishing in 1978 a report written in order of the French government and titled L’Informatisation de la Société. They stated that the computer is the crucial factor, which speeds up all other technological innovations. But its effects will not be limited on the technological development it will affect the entire organisation of societies and the socio-cultural relations.\footnote{“Computer is not the only technological innovation of recent years, but it does constitute the common factor that speeds the development of all others. Above all, insofar as it is responsible for an upheaval in the processing and storage of data, it will alter the entire nervous system of social organization … open radically new horizons … [transform] the pattern of our culture … affect the economic balance, modify power relationships, and increase the stakes of sovereignty” (Nora & Minc 1981:3–4).} The report recommended state action in this field “standardizing the networks, launching communications satellites, and creating data banks” [Nora & Minc 1981: 6] and decentralizing “when the hended changes require other groups to take the initiative” [Nora & Minc 1981: 9]. In this argumentation line, the information society is clearly technology pushed considering that the innovation in the area of information and communication technologies is the central cause of the socio-economic changes in the last 50 years. But at the same time, it is a political project pushing by technology policies the socio-economic change.

The introduction of these technologies characterized by its multi-functionality and their networking capability has caused a second industrial revolution [Steinmüller 1981: 153f] and the emerging of the information society. The second industrial revolution is after the automation of manual work, the next step providing the automation of brainwork. The application of the information and communication technologies in the work processes, for instance numerical controlled system in the manufacturing industries, but also in the administration produced a considerable impact on the work practices. In the sociological analyse of the changes in the work process, it was talked about post-fordism and flexible production systems. Nora & Minc [1978] argued that the information and communication technologies would wide spread in the society and penetrate in all social spheres producing a social transformation towards the information society. However, Schienstock et al. [1999] considered the technology push approach as insufficient to “comprehend the fundamental economic and social changes caused by this transformation process.” They further argued to perceive the ICTs not as an external factors, which have impact on the human activity, but as “the fabric in which human activity is woven: we therefore have to stress the process perspective of modern ICTs besides the inducing of new products” [Schienstock et al. 1999: 15].
The idea of the information society started in the 1980’s to transcend the borders of the social sciences becoming a doctrine to promote social-economic changes based on several assumptions as Nick Dyer-Witheford [1999] outlined:

- The world is in phase of a fundamental transition comparable to the transition from the agrarian to the industrial society;
- The basic resource of the new society is the techno-scientific knowledge
- The driven force of change is ICT-development and diffusion;
- The generation of wealth in the information economy has become more relevant than the wealth generation in the traditional manufacturing industry;
- The social transformation caused by these technical changes is positive; in spite of some negative effects
- It is a world-wide transformation;
- It is not only a new step forward for the human civilization but “also a new stage in the development of life itself.” [Nick Dyer-Witheford 1999: 26]

The historical development of the concept “information society/ economy” can be interpreted as a history of conceptual reduction. In the beginning stood the works of US-American and Japanese social scientist stating a profound socio-economic change in the developed countries. This change are linked to the general social modernisation process, which change the economic and occupational structure of the societies [Machlup and Porat], but also the patterns of social behaviour preferring products with a high informational value in front of standardized products with a high functional value. This is accompanied by the change from mass production and from large scientific projects to diversified projects. This implies, in the view of the Japanese social scientist – a de-massification of the mechanism of coordination and control. But in the 1970 and 1980, this broad perception of socio-economic modernisation changed to a more reduced perspective focused on one main cause of transformation: the technological innovation. Technological innovation, more in concrete the information and communication technology, is perceived as an external factor which impulse the socio-economic transformation.

2.1.2. The network society

The technology pushed approach has been further developed by M. Castells, who transformed it into the concept of the informational capitalism and the network society. In the line of the second industrial revolution, Castells considered that the humanity is facing since the 1970’s a new technological revolution, based on the information and communication technology and the Internet, which will have a similar impact as the first industrial revolution. Meanwhile the first
The impact of this revolution can be observed in the work environment, where flexible production and work concepts as the flexible systems of production and lean management will become more and more important. But independently to the concrete forms of management, the broad use of ICTs will allow a considerable increment of productivity as the basis for future welfare. It produced and will produce depth change in the economic, social and political dimension of the societies. „A process of structural transformation is underway in most societies. It stems from the combined impact of major technological revolution based around information technologies, the emergence of an informational/global economy, and a process of cultural change whose main manifestations are the transformation of women’s position in society and the rise of ecological consciousness“ [Castells, 1996, S. 9].

Anyhow, Castells considered the new type of society as capitalist society, whose production mode is characterised by how the added value is distributed among the population. This production modus has been generated at the beginning of the industrial revolution and will not be abolished by the new technological revolution. But the modus of development is different to the industrial society and will cause depth changes in the society: „Thus, modes of development shape the entire realm of social behavior, of course including symbolic communication. [...] It follows that we should expect the emergence of historically new forms of social interaction, social control, and social change“ [Castells, 2000: 18]. Castells called this new mode of development informational, which gave place to call this new type of society informational capitalism. “I call this new mode of development informational, constituted by the emergence of a new technological paradigm based on information technology“ [Castells, 2000: 17].

In the centre of this concept stands the technology, the ICTs. It allows first a productivity growth. „What is distinctive is the eventual realization of the productivity potential contained in the mature industrial economy because of the shift toward a technological paradigm based on information technologies“ [Castells, 2000: 99] This productivity growth is due to the fact that this technology allows the action of knowledge on knowledge. This is the difference to the former types of societies, in which knowledge has been also highly relevant. „However, what is specific to the informational mode of development is the action of knowledge upon knowledge itself as the main source of productivity“ [Castells, 2000: 17]. Meanwhile the treaty of
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information and knowledge production hasn’t stood in the centre of the society, in the informational capitalism the treatment of information and its continuous improvement becomes the crucial element. As the improvements has effects on the treaty of information itself, a „cumulative feedback loop between innovation and the uses of innovation“ [Castells, 2000: 31] is established. For the first time in the history of the humanity, knowledge is converted in unmediated production factor. In consequence, the continuous improvement of the ICTs becomes one of the main sources of progress and welfare. The idea of action of knowledge upon knowledge echoed the approach of Dunker. But meanwhile Dunker was talking about management strategies to organise the knowledge work process, Castells used this idea of a self-circled process for the ICTs.52

The applications of the ICT produce especially a profound reorganisation of the enterprises. The technology offers the possibilities to restructure the economic processes at the global scale. The real geographical location of specific economic processes lost relevance. The new structure is characterised by the enormous data flows, which are connecting people and places, as well as enterprises. The interaction becomes more independent from the real geography. These technological based forms of interacting have one of its mayor expressions in the restructuration of enterprises. Picking up the argumentation of the end of fordism and of the flexible production systems; Castells considered that the traditional hierarchical organisation of big enterprises is obsolete in the informational capitalism. Using the ICTs, the enterprises will opt in the future for a network organisation with a more horizontal coordination between more autonomous business units. In an uncertain and changing environment the network organisation is more adequate then the hierarchical organisation. The informational capitalism is characterised by global and complex markets based on fragmented and specific demands of the clients. This requires new and more flexible production and business systems. “For the firm to operate in such a variable geometry of production and distribution a very flexible form of management is required, a form that is dependent on the flexibility of the firm itself and on the access to communication and production technologies suited to this flexibility” [Castells, 2000: 123]. The adequate answer of the enterprises to these challenges will be the reorganisation based on network principles using the ICTs promoting forms of more horizontal instead of hierarchical coordination

The critics on the concept of Castells are centred in three aspects:

- The concept is technology driven and starts from a unidirectional concept of technology, which shows certain nearness to technology determinism. Castells takes the technological

52 It is also noteworthy that Castells hasn’t developed a own concept of knowledge. He takes simply as grounded the definition of Bell. And in his work he doesn’t develop theories of the role of knowledge or knowledge types in the information society.
innovation as grounded and doesn’t ask for the social process of technological innovation. [see Stehr: Wissen und Wirtschaften. 126]

- He argued in favour of the informational capitalism using the expression of the action of knowledge upon knowledge, but he didn’t develop a convincing concept of knowledge or types of knowledge.

- He used a too simplified concept of network. He didn’t take into account the diversity of networks types classifying them within a continuum with markets and hierarchies as the two extremes. Under the header networks he included disperse networks types without going in depth into the discussion of the different mechanisms of coordination (or power) within these networks or the different distribution of benefits. The term network is used as a metaphor without using his whole potential of the analysis of social interrelations. Castells isn’t asking for the hierarchies and control within networks. He is interested in the question how the ICT are incrementing the communication potential beyond the frontiers of the traditional hierarchical organisation. That produced the curious effects that Castells – in spite of coining the term informational capitalism – didn’t analyse the distribution of profits within the networks [see Wolf 2000 and Westermayer 2003].

2.1.3. The knowledge society/economy

The notion knowledge society has its origin in the 1960’s when social scientist as P.F. Drucker, D. Bell, March and others started to analyse the transformation of the industrial societies towards a so-called post-industrial society. In the decade of the 1960, the terms knowledge workers and knowledge society has been introduced, but the term “post-industrial society” was the preferred in the discussion about modernisation in that time. It was supposed that such type of society is characterized by a social-economic structure, in which labour, material resources and capital has been substituted by knowledge as main sources of productivity, growth and social inequalities. [Drucker 1994] The concept of the post-industrial society expressed the transition from an economy based on the production of material products to an economy based on services (immaterial products), which disposes of an professional structure characterized by the predominant category of technical high qualified professionals. This approach sustained that the theoretical knowledge will become the principal source of innovation and the point of departure of political and social strategies. This type of society is focused on the technological progress, the evaluation of technology and by the generation and use of new intellectual technologies as the basis for decision processes.

In the latest 1970’s and in the 1980’s, the concept of the post-industrial society becomes less used for the analysis of the social-economic transformation processes in the industrialized
societies, but in the 1990’s the concept re-emerged as well in the political sciences as in the social sciences including the economy [see Reich 1992, Drucker 1994, Lundvall & Johnson 1994, Stehr 1994, OECD 1996, Krohn 1997, Knorr-Cetina 1998 and Willke 1998] In certain way, this was an answer to the limitation of the concept of the information society to guide the process of social transformation in the globalizing world society and also to explain theses transformation processes. Meanwhile the concept of information society is focusing the technological base of the society as a motor of transformation, the concept of knowledge society has a broader perspective to describe the transformation process, to analyse the actual society and to underpin the difference to the industrial society. Nevertheless is still unclear what a knowledge society is. Heidenreich [2003] distinguished four used definition areas:

1. Similar to the concept “information society”, this concept of knowledge society highlights the relevance of development and use of the information and communication technologies (TIC) for the socio-economic processes.

2. The concept underpins the new forms of knowledge production. Knowledge is seen as one of the main factors of economic growth besides labour and capital. For this reason, the production of knowledge intensive products and of services based on knowledge is considered as crucial.

3. The increasing relevance of education and training processes in the initial phase as well as in the whole life course is underlined.

4. The increasing weight of knowledge intensive services and of communication, which is generally called now knowledge work is highlighted [see OECD 2001 and Reich 1992]

This concept relates the emergency of the knowledge society to actual phenomena establishing so a new type of society. However there exist also alternative points of view considering that knowledge society has still exist in the past, for instance the Ancient Greece [Witek 2006]. In this argumentation line, the knowledge-based society is a society based on the ascetic ideals of Socrates and Platon, adopted by Christianity a few centuries after their death. This perception rejects the technocratic vision of the knowledge society, according to which the primary aim of the knowledge society is to achieve “…global dominance by building a competitive economy in which the intellectual capital would be recognized as the most important factor” [Witek 2006:96]. This concept is concerned with a society based on art and religion in which “…the process of degeneration of a specific human being to the level of a one-dimensional creature, similar to all other representatives of the species”, would be halted [Witek 2006:101]. Placing an emphasis on tradition as a mechanism of handing down the cultural heritage is intended to give the knowledge society an axiological dimension.
But in the actual discussion about the knowledge society predominates the concept which makes reference to changes in the technological and economical area related to the increasing use of TIC’s, the changes in education and training, transformation in the management of knowledge for instance in enterprises, but also in the financial processes and in the labour environment (knowledge work).

These approaches emphasises the emergence of the new kind of society in distinction in earlier forms of society, e.g. the agriculture societies and the industrial society. The transition from the industrial society to the knowledge society is characterized by: dematerialization (i.e. transformation of a part of material economy into processing of information), acceleration (i.e. reducing the time needed to produce a new product), decentralization (i.e., for example, manufacturing products on order, which was impossible in centralized economy) and globalization [Szafran 2002]. The civilizational breakthrough that societies are just experiencing is caused by “… an increasing role of science and education […] the basic resource of the post-industrial period, the era of the learning society, is knowledge, which has a significant impact on the quality of social capital” [Solarczyk-Ambrozik 2003]. Summing up, we can assume that the knowledge society is a society in which knowledge constitutes a fundamental factor of civilizational development. At the same time, it is an essential determinant of personal development and individual fulfilment.

However, this broad definition of knowledge society doesn’t seem to be adequate to make the distinction between a supposed knowledge society and other types of societies taken in consideration that all societies are disposing of knowledge [Stichweh 2002 and Castells 2007]. Heidenreich [2003] pointed out that it also seems unclear if knowledge isn’t use only as a residual category to explain economic growth, which could be explained by other factors. And the fact that the concept is used by political institutions as the OECD and the European Union to promote political strategies doesn’t contribute to achieve a clear definition about what knowledge society is. It increments the suspect that it is more a political guideline than a contrasted sociological concept. Nevertheless there is an ongoing sociological discussion about the concept, which has different impacts in the different EU-language areas [see Krüger 2006].

The actual discussion of the knowledge society underpins the fact, that not only the technology progress is the driver of social-economic change. Other factors like the increasing education level has a similar relevance or is more important then the technological progress. It sustains that knowledge in its different expression will become even more important for the social processes in the different functional areas of the societies. Knowledge has a growing weight as an economic factor, but also as a source of social prestige. Both are contributing to the need to
learn during the whole life course. But at the same time increased the conscience about the no-
knowledge and about the risks of modern society.\textsuperscript{53} Without going in the debate, what
knowledge is, it noteworthy that knowledge is perceived in this debate as the “\textit{capacity to social
action}” [see Stehr 1994: 208]. Taking in account this appreciation, we can’t talk about a
knowledge society only making reference to the fact that 90\% of all of the scientists in all the
time are living. This isn’t an indicator for the existence of a knowledge society, but an indicator
of the constitution of an autonomous system of knowledge production.\textsuperscript{54} The actual society
doesn’t dispose of more knowledge then any other society, but the knowledge is more variable
and verifiable in respect to expectations. The knowledge society is characterized by the
decreasing relevance of rituals, traditions and norms accepted without discussion. It is even
more characterized by the disposition to put in question traditional and socially accepted
perception, suppositions and expectations and the even more rapid construction of new
perceptions, suppositions and traditions. This thesis implies that in the actual societies
expectation are even more based on knowledge in stead on norms. In other words, the
expectations are even more variable and open for revision. The rules and evidences of our
societies are even more submitted under a reflection process, which conduced to an accelerated
process of deconstruction of traditional regulations and reconstruction of traditions and
regulations.

The consideration if a society has become a knowledge society doesn’t depend, in so far, on the
type of products produces (for instance immaterial and I&D intensive products) or of the
specific competences of the employees (for instance a high degree of academic qualified
citizens). Nor consultancies, investment banks, brokers, software enterprises, publicity agencies
etc. which are often mentioned as knowledge organisations are indicators for a knowledge
society taking into account that the required knowledge and experience for the production of
clothes or steel are not less knowledge intensive. Nor the immateriality of the economic
processes can be used as an indicator as the immaterial processes are so open for standardization
as the material process reducing the margins of individual action and decision.

\textsuperscript{53} These circumstances induce the need to clarify, what knowledge is? But this discussion is not an issue of this
essay.

\textsuperscript{54} The discussion in turn of the knowledge society as well as the discussion about new modes of knowledge
production tends to confuse knowledge with scientific knowledge. But as e.g. the discussion about work
process knowledge showed, there are other forms of knowledge highly relevant for economic processes. On the
other side, the difference between technology and science, which is a basic element allowing the constitution of
science as a social system – underlines the existence of different knowledge types. And the Japanese discussion
about the information society introduced the element, that the future society is characterised by the validity of
different kinds of rationality.
The crucial criterion is the disposition to put in question established norms and rules.\textsuperscript{55} Knowledge is uncoupled from traditions. In the modernity, knowledge is related to the production of something new [Stichweh 2006: 10]. In this sense, the general innovation capacity of a society is the constitutive element of a knowledge society. We can only talk about a knowledge society if the structures and processes of material and symbolic reproduction are impregnated by operations based on knowledge so that the information treatment, the symbolic analysis and the expert systems are becoming dominant in relation to other re-production factors. Other requirement to consider a society as a knowledge society is that the knowledge in general and the knowledge of expert are constantly submitted under a revision process so that innovation becomes a daily component of the work based on knowledge [see Willke 1998: 355]. Nevertheless it can be assumed that each society has a disposition to innovations. No society can be invariable in time, as it is also impossible to thing in a society without any traditions, norms or institutionalised rules. But only the modern highly differentiated society has been able to generate permanent dynamics focused on transformation. But the validity of the concept of knowledge society depends on obtaining clear indicators that the production, distribution and reproduction of knowledge have really become the supposed strategic and predominant relevance for the actual societies and that innovation of traditions, rules and norms has become a constant phenomenon. The accelerated and constant erosion of its regulations structure and the accelerated development of new rules and norms is the characteristic of the knowledge society. In this sense, one of the key indicators to considerate a society as a knowledge society is the oscillation between regulation, deregulation and new regulation.

The concept knowledge society underpins the fact that the socio-economic processes gain a new quality because the knowledge becomes the most important production factor. In this sense, a new production mode is constituted in spite of that the capitalism is still the dominant principal of the actual socio-economic system.\textsuperscript{56} This consideration indicates also the existence of old and new social risks of exclusion, which are now even more related to the lack of knowledge or the lack of access to knowledge and information. On the other side, the political use of the term seem to promise a more equal society in which the citizen could expect more gratifications if he

\textsuperscript{55} The frequent errors in the prognostic of the stock exchange markets induced a certain de-mythification of the so called knowledge workers and the symbol analysts [see Reich 1992 and Willke 1998]. Nevertheless, there is a important difference between the rites of the shamans and the prognostics of the stock exchange analysts: Meanwhile the rites of the shamans seem invariable in time, the principles of the stock exchange analysis is frequently revised and corrected if it seems necessary. That means, the criterion of knowledge work is not the mayor certainness of the knowledge or of the prognostics, but in the disposition to change procedures and expectations.

\textsuperscript{56} Here is a coincidence between the knowledge society of Stehr and the “network society” of Castells.
realize the required and needed efforts.\footnote{See Bittlingmayer, Uwe H. (2001: 22)} In this sense, the knowledge society is a projection to the future of the well-known objectives to reduce social injustice [see Castells 2000: 326].

One of the pillars of the knowledge society is that education and training would contribute to reduce the lack of knowledge and so the social injustice. This has its reflection in the Lisbon Strategy of the EU and the programme “Learning 2010”. But there are critical voices on this vision. One argument is that the increase of the general education and qualification level and the growth of academic titles would invalidate the titles (title inflation). In other words, a high qualification degree will not have any longer a function within the social mobility process. In the best case it will be helpful to avoid to downer in the social hierarchy. Other argument refers to the disillusion about the education policies of the 1970’s and 1980’s, which has contributed to upper the general qualification level, but which had no significant effect on the unequal social opportunities [Bittlingmayer 2001: 22]. That means that without a transformation of the central mechanism of socialisation– competitiveness and market - the modern society will produce social inequalities and discriminations.

Another point of the concept of the knowledge society is the observation that the deregulation process has one of its mayor expressions in the transformation of the labour market towards a de-standardisation of the labour relations. The stable and highly regulated labour relations of the post-war period aren’t even more the reference point. The until now considered atypical labour relations as for example part-time work, temporary work contracts, false autonomous etc. become more frequent as well as the exits and re-entrances in the labour market will become normal. This will affect not only the low qualified citizens but also even more the high-qualified citizens.

An alternative concept to knowledge society is the knowledge economy\footnote{We preferred to use the term knowledge economy instead of knowledge-based economy.}, which has been promoted e.g. by the OECD in the 1990’s.\footnote{“Knowledge economy” has conceptually spoken a high similarity to the so-called new economy. Labelling a concept with the term new is a problematic because the new is after some years no more new as e.g. the new information and communication technologies} The discussion in turn of the knowledge economy is based on a lack of definitions: “The weakness or even complete absence, of definition, is actually pervasive in the literature… this is one of the many imprecisions that make the notion of knowledge economy so rhetorical rather than analytically useful” [Smith 2002]. Brinkley [2006] pointed out that the basic problem consists in the insufficient definition of what knowledge is. In spite of these conceptual imprecision, the term is be widely used in the debate about socio-economic transformation promising, “endless productivity gains, faster non-inflationary growth- and ever-rising stock markets” [Brinkley 2006: 4] The ICT revolution permits firms to exploit scientific and technical knowledge conducing to decreasing transaction

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and processing costs. The knowledge economy will promote new forms of inter- and intra-organisation of enterprises, will transform radically the employment relationships by incrementing the so-called knowledge workers in low-regulated labour relations as freelancers or self-employers. On the other side, there are voices claiming that the society and the economy have always been based on knowledge. Technical, organisational, process and product innovation has always provided competitive advantage to the innovators. The only difference consists that now the knowledge is operated on a bigger scale and faster.

To go in depth in the discussion, we refer here to the documents published by the OECD in the mid 1990’s especially dedicated on the issue knowledge economy. The term knowledge economy implies the recognition of the relevance of knowledge and technology (as objectified knowledge). Traditional economic theory has considered only labour, capital, material and energy as production functions, meanwhile knowledge and technology as been considered as external factors. But new approaches have included both as production factors. “Investments in knowledge can increase the productive capacity of the other factors of production as well as transform them into new products and processes. And since these knowledge investments are characterised by increasing (rather than decreasing) returns, they are the key to long-term economic growth.” [OECD 1996: 11] So knowledge may affect the returns of investment, which on the other side would contribute to the knowledge accumulation. The knowledge can for example influence the returns of investment by a specific way to organize production, but also by the development of new or improved products and services. And technological change raises the relative marginal productivity of capital through education and training of the labour force, investments in research and development and the creation of new managerial structures and work organisation. [OECD 1996: 11]

But knowledge is a challenge for the economic theory, which starts traditionally from the principle of scarcity of resources and goods. But knowledge and information are not scarce neither combustible “...what is scarce is the capacity to use them in meaningful ways” [OECD 1996: 12]. It also produced problems for the traditional theory of economic transactions, as it seems not clear what it is sold when information or knowledge is sold. Information and knowledge can’t be transferred from one point to another as a material good if it not takes the form of a material good in form of books, CD etc. Knowledge and information stay always at the side of the seller. An in some cases the knowledge and information is so complex that the buyer can’t use it without specific explanation or training. That means this transaction requires a

“...And there have always been organisations and institutions capable of creating and disseminating knowledge: from the medieval guilds through to the large business corporations of the early twentieth century, from the Cistercian abbeys to the royal academies of science that began to emerge in the seventeenth century.” [David, & Foray, D. 2003: 20].
more complex context in which linkages between the seller and the buyer for example in form of networks or training-learning relationships must be established. On the other side some knowledge is low complex, so it “can be easily reproduced and distributed at low cost to a broad set of users, which tends to undermine private ownership”[OECD 1996: 12].

The OECD-concept of the knowledge-based economy refers to a distinction of different forms of knowledge, which has been developed by Lundvall & Johnson [1994] within their concept of the learning economy: know-what, know-why, know-how and know-who. It is proposed to include know-what and know-why in the category of information, which is a nearer category then knowledge. “These are also the types of knowledge which come closest to being market commodities or economic resources to be fitted into economic production functions” [OECD 1996: 12]. Know-how and know-who are considered “tacit knowledge” and are not easily open for codification and measurement. The information and communications technologies had given and still give strong impetus to the codifying knowledge. “All knowledge which can be codified and reduced to information can now be transmitted over long distances with very limited costs” [OECD 1996: 13]. The trend to the codification of knowledge conduced to the perception that knowledge acquires the properties of a commodity following the intrinsic principles of the capitalistic market economy. In certain way, knowledge is converted in information by the process of commoditisation.

The widespread of information in the so-called knowledge economy claims an increasing “need for continuous learning of both codified information and the competencies to use this information” [OECD 1996: 14] that means competencies to select and to use the information. In other words a specific tacit knowledge is required to handle the commoditised knowledge. In this sense, the success of an enterprise doesn’t depend only on the capacity to generate and to by commoditised knowledge, but to develop the adequate tacit knowledge to handle effectively the huge commoditised knowledge by its own and by their integration in interactive networks.

The OECD-approach of the knowledge economy is based on a double interpretation of “knowledge”. On one side, they are referring to the commoditisation of knowledge and it processing by the ICTs. This includes the increasing weight of “cultural products” as music, videos, video-games, software etc. but also the commoditisation of scientific results especially by patenting in the area of biotechnology, nanotechnology, medical devices, software and the commoditisation of training, education and consultancy. This process has by itself two sides. First, we observe an increasing transfer of yet existing or now created (digitalised) information supported by the TIC’s. Second, we observe a increasing process of codifying knowledge preparing it for the transfer by the TIC or by traditional means like books etc. “... codification amounts to the process of reducing human knowledge to information” [David & Foray 2003:26]
The codified knowledge is converted to information and is no longer knowledge, but it helps “to stabilise and reproduce knowledge” [David & Foray 2003:26].

On the other side, they are referring to the increasing need to share the knowledge processing supported by the ICT, which has its reflection in the increasing networking in the economy, the applying of network principles within the organisations and the creation of knowledge communities especially in the science. This implies a re-valuation of the tacit knowledge existing in the enterprises, but also in science.

In the core of the concept knowledge economy stands the codification of the volatile product knowledge, which is neither scare nor combustible. This obliges the political institutions to reinforce the intellectual property rights to maintain the idiosyncrasy of the capitalist socio-economic processes. The transference of codified knowledge – that means here knowledge with an economic value – isn’t open or unrestricted. In this sense, a knowledge economy is a closed society with restricted access to information and knowledge. The political strategies of the national governments, the OECD and the EU e.g. are a brake for the development of the whole potential of the knowledge society. These strategies aren’t focused on the openness of knowledge processes but on the introduction of mechanism to restrict the access to knowledge by legal or economic instruments.

2.1.4. Learning economy

Another concept coming from the economic sciences used in the political and social science debate is the approach of the learning economy. This concept is widely associated with Lundvall, who has published in the 1990’s a series of articles about the term. The idea of the learning economy can be followed back to the notion of “human capital” and of “learning organisation”, which introduce the idea that a higher productivity is related in some way to a higher qualified human capital. Lundvall underpinned the importance of the learning process instead of the knowledge codification processes. “The learning economy indicates an economy where the success of individuals, firms, regions and national economies reflect their capability to learn (and to forget which is often a pre-requisite especially for learning new skills). The learning economy is an economy where change is rapid and where the rates at which old skills get obsolete and new ones become in demand is high [Lundvall 1996: 2]. In other words, the learning society is one in which rapid transformations are happening which requires a high

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61 The access to knowledge is restricted not only for economic reasons, but also when it is considered militarily or political sensitive.

62 “Many people assume that the effect of higher productivity by investment of highly qualified human capital, in combination with highly sophisticated means of production, is so strong that fewer and fewer people will be required for production, but more and more will be required for the application of knowledge. This effect could be seen as an emancipation from physical labor and an opportunity for higher learning.” (Kellermann 2002: 2)
capacity of adaptation. Lundvall sustained that “an acceleration in the rate of learning and change” can be observed over time form the beginning of the industrial revolution until now [Lundvall 1996: 13].

Lundvall based his approach on a clear distinction between information and knowledge. “Information corresponds to the specific elements of knowledge which can be broken down into bits and sent long distance by means of information infrastructures. Therefore neither is learning just access to an increasing amount of information. Knowledge includes skills and fundamentally learning is a process of building competencies” [Lundvall 1996:2]. He distinguished then knowledge in four different form: know-what, know-why, know-how and know-who. Overall the first one, the know-what, is open to be informatized, that means transferred in a highly codified form, which can broken down in bits. But also the second form, the know-why, is, in certain way, open for codification in standardized knowledge bodies, which then can be easily transmitted. Nevertheless this affects only a part of the know-why, especially the scientific knowledge. But part of the know-why is tacit knowledge acquired in work experience, which is not so easy to codify. The know-how and also the know-who are not so easily open for its formal codification. It is a kind of knowledge, which is acquired in practice by social interaction with others and with the objects, which constitute the concrete work or life environment. Both are fundamentally tacit knowledge.

The approach of learning economy starts from the assumption that the situations, in which the citizens are working and living are in permanent change and that “they are learnt and forgotten as time goes by” [Lundvall 1996: 3]. Not only the allocation of existing resources is important for the economic performance but also “the creation of new use-values, products and services” [Lundvall 1996: 3]. The learning capacities gains in relevance with the implementation of the ICTs and the accelerate codification of knowledge, which increments the demand for personal qualified to handle the increasing information flow.63

The codification of knowledge has only a limited effect on the tacit knowledge, which is not open for ordinary market transactions. “There are different prototypes of learning new skills but they all have in common their strong roots in the social system. The apprenticeship prototype combines elements of authority with elements of trust. Another prototype could be the 'Academy' where some of the discourse may be taking place between equals and where there are strict ethical rules making sure that the communication is truthful and honest” [Lundvall 1996: 15].

That means that a learning economy is build on trust, which is “a multidimensional concept but is has to do with reliability, honesty, cooperativeness and a sense of duty to others.” But the

63 It has also the consequence of the exclusion of a part of the work forces. “The process is thus characterised by cumulative causation and it has as a consequence the exclusion of a big and growing proportion of the labour force from normal wage work.” [Lundvall 1996: 13]
concept of the learning economy build on trust is not compatible with an economy based on the pure market principles. As Arrows [1971] said “trust cannot be bought: and if it could be bought it would have no value whatsoever”. That means the trends towards a pure aspects of the capital society – the orientation towards quick profits based on speculation – is contradictory to principles of learning economy and is undermining it, as well as its inherent trend to social polarisation between workers able to handle information flow and to learn and the workers unable to handle the information flow and to adapt themselves to new situations. In other words a successful path towards a learning economy must promote trust by strategies to promote social cohesion. “As the social basis for learning is eroded, the rate of change will slow down. This is one reason why the analysis of the learning economy cannot neglect the social dimension and also why any policy strategy aiming at promoting the learning economy must have a New Deal as an integrated part.” [Lundvall 1996: 17]

2.1.5. Visions of a new type of society?

The brief presentation of the different concepts to explain the actual modernisation processes indicates the long-run of the conceptual development from the 1960’s on. In the decade, the basis of the information society and the knowledge society are laid in the USA and Japan. In this period, the changes in the occidental societies are linked to the changing distribution of the GDP between the sectors and the changes in the occupational structure. These changes are conducted, so the perception, to fundamental changes in the occidental society becoming the theoretical knowledge the axial principle of the society [Bell]. They obliges also to development new strategies of management to increment the efficiency of the knowledge work [Dunker]. The Japanese concepts of information society linked the modernisation processes also to changes in the socio-economic behaviour of the population. This has its expression in the changes in the types of products demanded. A change from products with high functional value to products with high informational value is observed yet in the 1960’s. This produced a change in the economic activities incrementing the relevance of these activities like design, research and development, incrementing the informational value of products. Another important and distinctive aspect of the Japanese concept of the 1960’s was the suggestion that the information society will be characterized by a variety of rationalism. In contrast to the theory of Bell, it is not assumed that the theoretical knowledge will be the axial principle of the society, but different types of knowledge’s and rationalities will compete.

In this phase of the conceptual development, it is considered that the technology plays besides other factors an important role in the modernisation process. But form the 1980’s on, the technological progress in the ICT-area is seen as the main (and only) driven force of
The social function of higher education in the social models of the European knowledge society

modernisation. The information society is considered now as a society based on the massive application of ICTs. The ICTs through their multi-functionality and networking capability has produced a second industrial revolution and produced deep social, economic and cultural change in the societies.

In the 1990’s a new conceptual change can be observed through the switch from the information society/economy to the knowledge society/economy. The concept of the knowledge economy is technology driven. It is focusing on the changes produced by the improvement of the ICTs and their wider use in the economic. It is strongly oriented to the commoditisation of knowledge in its different forms (conversion of knowledge to information, which can be commercialised) and the need of learning caused by the growth of the use of codified knowledge, which has its reflection in new forms of work organisation based on any form of networking. This concept of knowledge economy stands between the technology driven concept of the information society and the approach of the learning economy. It is based on the distinction of four knowledge types proposed by Lundvall in his learning economy approach, but it goes not so far as Lundvall in the discussion of knowledge and its consequence for the economic development. The concept of knowledge economy tends to use a more static concept of knowledge and of society. The knowledge economy handled the problem of the specific volatile character of knowledge, which can be easily tackled by the traditional economy, trying to convert knowledge in scare product restricting the access to knowledge.

On the contrary, the learning economy approach is using this distinction of four knowledge types to underpin the importance of learning as a basic of the social-economic transformation. It identified this as a long-term trend, which started with the industrial society. Knowledge is used as a basic by each society and each economy, but the rhythm of knowledge change and the learning processes are incrementing. The learning economy approach underlines the internal contradictions between the trend to the learning society and the capitalist economy. In a totally unregulated market, learning and overall mutual learning processes will be strongly limited because they are based on mutual trust. But an unregulated market isn’t able to build up trustful relations and would undermine the learning processes. For this reason, to have at the end of road success in the way towards the learning society, a certain social coherence must be achieve in the EU-society.

In the 1990’s emerged also an alternative concept in response to the limitation of the technological driven variant of the information society. The approach of the knowledge society tried to widen the conceptual basis beyond the technological forces. It doesn’t questioning the relevance of the technological progress, but it put the knowledge and its development in the centre of modernisation process. Knowledge is seen as even more important production factor. Recovering in certain way the distinction between functional and informational value of the
products, the production of knowledge intensive products and services are considered crucial. Education and training are considered as highly important to support the transition to the knowledge society. But the sociological approach of the knowledge society goes a step forward. Criticising the measuring of the progress towards the knowledge society through scientific research intensity and the diffusion of knowledge products, the sociological theory goes beyond the statement of the growth of information and knowledge use in the modern society and identified the characteristics of the knowledge society in the constant reflection about known procedures and processes. As an essential characteristic of the knowledge society the accelerated and constant erosion of its regulations structure, traditions and norms is identified. This conducd to the constant and also accelerated development of new rules and norms. One of the essential characteristics of the knowledge society is the oscillation between deconstruction and reconstruction of structures, traditions, norms and rules.

Similar to the sociological approach of knowledge society is arguing the learning society approach. The intensified global competition and the fast changing environment force companies to develop their work organisation and to introduce new forms of work organisation. In the emerging knowledge society/economy, learning capacity of firms becomes a crucial element of the competitiveness. ‘The learning economy concept signals that the most important change is not the more intensive use of knowledge in the economy but rather that knowledge becomes obsolete more rapidly than before; therefore it is imperative that firms engage in organizational learning and that workers constantly attain new competencies’ [Nielsen & Lundvall, 2003, p.3]. Similar to the sociological approach of knowledge society, the learning economy approach considered as the fundamental characteristic of the emerging society, the accelerated and constant erosion of its regulations structure, traditions and norms and that the knowledge structure is under constant revision. It concludes that facing these challenges firms have to reshape their work organisation and ensure a higher level of functional flexibility and networking capacity giving birth to new organisational forms.

The different social scientific discourses can be reassembled under optimistic, pessimistic and sceptical positions. According to optimistic view, the balance between the knowledge and resources has changed at the expense of the latter factor of the value creation. In this view, knowledge has become by far the most important factor determining standards of living – more than land, capital and labour [Cook 2006: 1] This shift in the importance of the factors creating values was interpreted in an optimistic perspective by Young [1998: 209] who argued that “the

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64 We follow here the argumentation of the Hungarian Report of the Work Stage 1 of the NESOR-project, which can be consulted at www.dia-e-logos.com. Some of the following parts are taken directly form this report with the autorisation of the authors.

shifting importance of factors creating values in the economy/society… will automatically raise the level of skills, knowledge, education, training and learning required of all employees or, alternatively, to advance educational reform proposals around the promise of new production process that are said to be ‘emerging’.” In these views, knowledge has a certain character of a public good, in comparison with the private ones. The optimistic position on the development trajectories opened by the knowledge economy/society is expressed often translated by the massification of the higher education system.

The pessimistic view represents a refusal of euphoria surrounding the knowledge economy/society. According to this approach, the high skill society has a rather exclusive instead of inclusive character. For example, in the case of the UK, several authors are indicating that the “… vast majority will find themselves excluded. Even Giddens [2000], who clearly welcomes the opportunities afforded by the knowledge economy, acknowledges that it will mean greater uncertainty and insecurity in the area of employment.” [Lloyd & Payne 2004: 210].

The sceptic commentators are questioning the fundamental diffusion of the knowledge and creativity driven economy. In many countries the competitiveness strategy based on low skills and low wages still remained an economically viable development pattern combined with the growing importance of the so-called high skill equilibrium. That means that the fastest growing areas of employment are not just represented by such high-skill profile occupations like professional and managerial groups, software engineers and business consultants, financial analysts etc. occupied by the business service sector, but similarly high employment growth characterises such areas of employment as retail, hospitality and catering, banking etc. and in these sectors the firms’ dominant strategy of competition is based on low-prices, standardised products and services and are employing mainly low skill, low wages workers using the atypical or casualised workers. The sceptical writers call attention that “… the overall picture that emerges suggests ‘continued variability in workplace trends’, alongside a general underlying shift towards work intensification” [Thompson & Warhurst 1998: 8]. Despite the convincing importance of the knowledge-innovation based competition in the knowledge society, various forms of competition coexist even in the developed economies.

2.2. Policy Labels

The use of the terms knowledge society and knowledge economy in the political area is different to the use in the social science. The social science discussions nourish the political discussions, but these follows, nevertheless, their own pathways. The discussions around the knowledge society or the knowledge economy in the political papers of the Commission, the Council and the Parliament start in the 1980’s from the concept of Information Society.
2.2.1. The label: information society/economy

As we have argued before, the term information society has been developed in the USA and in Japan. The description of the evolution of this concept in Japan has shown that it has in its origin a high political component. However, this discussion showed also that the concept of information society, in its origin, wasn’t focused exclusively on the information and communication technologies, but reflect a general socio-economic trend in the status of the product from mass products to more personalised products.

The European discussion of the information society in the 1990’s was stronger focused on the information and communication technologies. The term information society wasn’t used in the eighties in the discourses of the EU in spite of the diverse programmes carried out in the area of information and communication technologies. But the used terms as for instance “wired society” or “broad band networks” were more technical driven. The term information society came in the political discussion of the EU in the 1990’s following the strategy marked by the Clinton-Gore government. The White Paper “Growth, Competitiveness and Employment” [1993] mentioned “trans-European networks”, but more relevant was the so-called Bangemann-Report [1994], which used the label “Global Information Society”. The concept reflected the discussion about the impact of the information and communication technologies on the European economy, the work organisation and the society. The concept was technology driven and was - and still is - the vehicle to promote the technological updating of the EU and a deregulation in the telecommunication sector.

Kubicek et al [2001] underpinds the impact of the technology policies of the first Clinton-Gore Government in the United States on the EU-strategy. The programme of the Clinton-Gore government promoted the information society but not under this label. Instead of information society, they preferred the term National Information Infrastructure (NII) and coined the popular term of “Information Superhighway”. In the NII-Agenda for Action [1993] the National Information Infrastructure was defined as the invisible network of networks, including telecommunication networks, computers, databanks and entertainment electronics. This network of networks should “enables all Americans to access information and communicate with each other using voice, data, image or video at anytime, anywhere.” [NII-Agenda for Action 1993]. The objective was initiating an information revolution, which would improve the competitiveness of U.S. firms in the global economy, generating good jobs and economic growth. The technologies to create, manipulate, manage and use information were considered a strategic for the USA. “Those technologies will help U.S. businesses remain competitive and create challenging, high-paying jobs. They also will fuel economic growth which, in turn, will
generate a steadily-increasing standard of living for all Americans.” [NII-Agenda for Action 1993]. This revolution, so the Agenda, would cause a deep transformation of the lives of the American citizens for instance tele-working, tele-teaching and -learning (lifelong learning), tele-medicine and more civil participation in the democratic processes. “It can ameliorate the constraints of geography and economic status, and give all Americans a fair opportunity to go as far as their talents and ambitions will take them.” The Agenda for Action is based on the public-private partnerships assigning a central role of enterprises and private initiatives in the promotion of information technologies. However it is also considered that these private actions require public support at different state-levels. Here is not the place to describe in detail the different action taken in this programme, but it is considered that the programme has been successful [Kubicke et al. 2001: 20]. The Clinton-Gore government achieved to bring in the issue of information and communication technologies in the public debate using the term information superhighway.66

In the EU, a year later the so-called Bangemann-Report [1994] defined the EU-strategy to promote the information society. A year before, the White Paper “Growth, Competitiveness and Employment” [1993] expressed still a social-democratic concern for the creation of jobs and equal opportunities together with the concern to improve the European competitiveness in a global economy. On the contrary, the Bangemann-Report, written by a high-expert group of economists, exposed a clear liberal approach proposing measure to reinforce the markets as the cornerstone for the transition towards the information society.67 The report “urges the European Union to put its faith in market mechanisms as the motive power to carry us into the information age” and recommended, “the creation of the information society in Europe should be entrusted to the private sector and to market forces.” For this reason, the report promoted the deregulation of the information and communication sector in favour to market driven tariffs aimed to develop markets for business, for small and medium sized enterprises and for consumers and audio-visual markets.

The information and communication technologies are considered as a new opportunity to achieve a “more equal and balanced society and to foster individual accomplishment” [Bangemann 1994: 5] and to reinforce cohesion. In spite of the priority given to the technological innovation for the development of the European society, the report considered the private economy as the driving force of the transition towards the information society. On

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66 Kubicke et al (2001: 20) underpins that terms make reminisce to the construction of the interstate, the US-highways, in the 1950’s based on the joint efforts of the public actors and the private sector. In this sense, the information superhighways are conceived in analogy to the interstates as a network, which give all American citizens the chance to achieve a better accessibility and mobility

67 The composition of the high expert group, formed by persons coming from big enterprises acting in the field, explains the strong economic orientation of the report. In this sense, the report is talking more about the information economy then about the information society.
contrary to other infrastructure sectors, as for example the transport infrastructure, where public investment is still necessary, the information and communication infrastructure can be managed by the private economy. “Monopolistic, anticompetitive environments are the real roadblocks to such involvement” [Bangemann-Report 1994: 8]. The main tasks of the governments is “to safeguard competitive forces and ensure a strong and lasting political welcome for the information society, so that demand-pull can finance growth here as elsewhere” [Bangemann-Report 1994: 8]. For this reason, the Bangemann-report proposed as a first action area to create a liberalized regulatory framework. This strategy of market development must be completed by the attention paid to the technological development as for instance EURO-ISDN, broadband and mobile and satellite communications, as well as protection of intellectual property rights, the protection of privacy, Electronic protection (encryption), legal protection and security and media ownership. Also ten so called applications to launch the information society are proposed: tele-working; distance learning; a network for universities and research centres; telematic services for SME’s; road traffic management; air traffic control; healthcare networks, electronic tendering, trans-European public administration network; city information highways. “The Bangemann-Report had more major and lasting influences on the framing of subsequent EU-policies for ICT-research and communication services.” [Preston 2003: 40] So for example the Commission elaborated, based on these proposals, an action plan, which in the following years was regularly actualized. But the report means a change in the orientation of the political strategies of the EU introducing a clear liberal and market based approach in the design of political strategies to foster the socio-economic modernisation promoting deregulation on all socio-political levels.

In the second part of the 1990’s, the EU-policies became more oriented to cover the social consequences of the massive use of the information and communication technologies. This has its expression in the creation of the Information Society Forum, with 126 members and. the constitution of another high-level expert groups (HLEG) in the year 1995.68 The recommendation of this expert group expressed not only a liberal point of view, but discussed also the social dimension of the European information society. In 1997, the HLEG published a policy report titled “Building the European Information Society for us all”. In parallel, the Commission has worked out a Green Paper titled “Living and Working in the Information Society” to promote wide discussion of the social and societal issues involved in the transition to the information society.

The HLEG-reports and the Green Paper, however, confirmed the technology driven approach of the EU-strategies. The massive use of Information and communication technologies will

68 Persons from the industry, the trade unions and social and communication scientist composed the HLEG.
transform the society, especially the work but also the day-to-day life. “In this way ICTs are reshaping working life, the organisation of enterprises and the whole of society. Enterprises are being transformed away from hierarchical and complex organisations with simple jobs to more decentralised and network-oriented organisations with more complex jobs.” [Green Paper 1997: 3] The technology is not at the service of the society, on the contrary the society must adapt to the technologies. “The very flexibility of the technologies means that they must be embedded in the social organisation of the workplace in order to achieve a competitive combination of productivity, performance and quality” [Green Paper 1997: 9]. This requires legal and contractual frameworks oriented to more flexibility in the work organisation assuring also an adequate level of security to workers. “Member States’ labour laws based upon the standard model of full time, workplace-based employment of indefinite duration, can no longer respond entirely to the needs of a more knowledge-based production of goods and services” [Green Paper 10]. The massive use of ICTs requires, in the opinion of the Commission, to rethink the flexibility – security balance. The Green paper argued for an increasing use of unstandardized work contracts as part-time work, temporary work, fixed term contracts, tele-working etc. On the other side, it proposed also renewing the concept of security going beyond the protection against arbitrary dismissals and discrimination. The security concept must be based also on the “increased involvement within the company and the possibility to develop skills and employability to the benefit of both company and employee” [Green Paper 1997:11-12].

Related to the flexibility-security balance, the adaptation of the social organisation to the flexibility of these technologies has another aspect in the need of the human resources development. The ICTs will change the skills requirements. For this reason, the EU-employment strategies must be re-oriented to the human resource development to bridge the already existing mismatch between skill supply and need. The IS “also means improving the quality of skills and therefore of education and training,” In consequence, the Green paper stated, “what Europe needs is a substantial overhaul of education and training that can match the ICT revolution and keep pace with continuing technological development during the years to come” [Green Paper 1997: 3].

The Commission argued for the improvement of the technological infrastructures for schools, so that they can use the whole potential of the IS-networks. In the other side, the Green Paper proposed in accordance to the 1st annual report of the Information Society Forum, a switch from teaching to learning. This is considered crucial for the creation of jobs and the productivity growth. “The education system must be transformed from teaching to learning. Enterprises must offer more learning by doing. The unemployed must be offered retraining instead of long term unemployment and de-skilling.” [Green Paper 1997: 3]
At least, the Green paper considered ICTs as an instrument to promote cohesion between EU-regions and as an important tool supporting regional and local development. To achieve these objectives, and in accordance with the Bangemann-Report, the first “challenge is to ensure that the liberalisation of telecommunications proceeds fully and rapidly across the Union and that the new regulatory framework supports cohesion objectives.” The second challenge is to assure synergy effects between the Structural Funds and Information Society policies and the third challenge is to ensure the development of the Information society will conduce to an inclusive society. “The Information Society should be about people and it should be used for people and by people to unlock the power of information, not to create inequalities between the information rich and the information poor.” [Green Paper 1997: 3]

This rough description of the use of concept of the information society by the EU indicates that it “indeed became a discourse in which it was possible to integrate many of the at first sight disparate European ambitions: from competition policy over competitiveness to maintaining cultural diversity and subsidiarity” [Servaes 2003: 12]. But it also evident, that the term information society is not the vision of a new type of society but the vision of the technology as the solution of all kind of problems. “In essence, we are presented with an impoverished, and essentially a-social, vision of the scope or potential for future societal development.” [Preston 2003: 49] In the discourse of the information society, the socio-political problems of the European society as been relegated to the background converting the technological development into the key measure and goal of the EU. The concept used in the political discussion of the EU shows only echoes of the original concepts developed in Japan and the USA. The EU-discourse is also dominated by the liberal paradigm of the market as the driving force of development. Naturally, there are references to the social aspects - the European social model – but as Preston [2003: 51] stated “these seem little more than occasional rhetorical gestures in the midst of policy concepts and practices that are fundamentally embedded in the neo-liberal ideology which celebrates a ‘market-driven’ information society and which privileges consumer identities and roles over those of citizenship.”

2.2.2. The label: knowledge society/economy

The information society approach was focused on the technological progress in the area of information and communication technologies. This approach was too limited to serve as leading concept in the globalised economy and to assure the economic position of the EU in front of the emerging economies like China, India etc. Taking as the starting point, that the EU can not compete with the emerging economies in labour cost, the knowledge incrusted in the products and the innovation capacity was considered as the main competitive factor of the EU. The
scientific and technological knowledge generate by the research institutes and enterprises as well as the high qualification structure of the EU-population are seen as the strong points of the EU-economy. This consideration conduced to a change in the political label to promote socioeconomic transformation but maintaining in the background the liberal orientation of the strategy.

One basic of the political concept of the knowledge society is the consideration of scientific knowledge as one of the key factors favouring the EU-countries in the global economy. Research and Development are considered as significant factors for economic growth, competitiveness, employment and social cohesion. It is important to underline that this political strategy promotes a specific understanding of the relations between science and society and in so far a specific conception of science: a competitive research in strong cooperation with industries and regions. Scientific and technological research must produce economic values.

Distance learning or lifelong learning as been yet mentioned as example for the application of the information and communication technologies in the political concepts of the information society of the Bangemann-report. In the course of the time, the learning issue gains relevance as a mean to adapt the work forces to the constant changes produced within the knowledge economy and caused within the EU a transformation of the original concept and the use of a new label: the knowledge society.

The new label assumed that the improvement of the technology basis of the EU is not sufficient to be competitive in a globalised world. The use of the information and communication technologies requires as well as the globalised world a coherent strategy to improve knowledge and qualification in the EU-member states. These considerations are agglutinates in the concepts of knowledge society or knowledge economy. Nevertheless, the EU doesn’t deliver a coherent clarification what knowledge society means. Many documents, which discussed some aspects of the knowledge society, are using the terms information society and knowledge economy in the same documents mixing up different concepts. Only as examples we can cite the brochure published by the Commission in the year 2003 titled “Towards a knowledge-based Europe. The European Union and the information society” [EU-Commission 2003]. Only the titled indicates still a confusion of concepts. Anyway, the document shows also the strongly technology driven concept of socioeconomic change, which is behind some strategies of the EU. The document

69 “Scientific research and technological development more particularly are at the heart of what makes society tick. More and more, activities undertaken in this domain are for the express purpose of meeting a social demand and satisfying social needs, especially in connection with the evolution of work and the emergence of new ways of life and activities.” [EU-Commission 2000: 6

70 As Stichweh pointed out, science could be constituted as own social system form the 18th century on a) by the reduction of the economic imperative of research and b) by the difference made between science and technology, which is economic driven and forms part of the economic system. Under this perspective, the EU-strategy around the knowledge economy implies a trend to re-invert this differentiation. This will have consequences on the science system itself converting it in a subsystem of economy.
indicates for instance that “over the last two decades, information technologies and the Internet have been transforming the way companies do business, the way students learn, the way scientists carry out research and the way in which governments provide services to their citizens.” [Commission 2003: 5]. A page later expressed the objective that the European citizen “must have direct and interactive online access to knowledge, education, training, government, health services, culture and entertainment, financial services and much more. In today's society, Internet access has become a fundamental right for all citizens and responsible governments have a duty to provide it.” [EU-Commission 2003: 6].

The change of the label of the EU-strategies was definitely confirmed in the Lisbon declaration, which is conceived as the main strategic document orienting the EU policies in the different policy area in the first decade of the 21st century. The EU fixed the objective to “to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion” [Lisbon declaration 2000] The concept of knowledge economy as the new label of the EU-policy brought together several action strands: as information society, R&D, structural reforms for competitiveness and completing the internal market. The Lisbon declaration conceived the knowledge economy as an information society enriched with scientific economic activities: a science-based information society. This indicates a next step within the development of the information society towards an economy based on commoditised scientific knowledge. Or in other words, the knowledge economy, as it is promoted by the EU, seems to have extended the term information society to other technologies. In this sense, the knowledge economy is simply a technological society.

This conception of the relation between science and innovation is critical. It is based on a linear model “where pure science (today called knowledge) leads to economic success” [Pestre 2007: 5], where innovation leads automatically to economic growth [Felt 2007: 21]. This doesn’t mean that there is no relation between science, innovation and economic growth, but the social reality is more complex as the simplifying political labels and “innovation is not automatically motor of such growth” [Felt 2007: 21]. On the other hand it neglects other forms of knowledge and established a knowledge hierarchy. It suggests also a certain automatism in the technological progress. “Because of international competition and globalisation, it is as if the nature of innovation had not to be discussed, as if ‘progress’ remained, more than ever, the ultimate solutions to all problems” [Pestre 2007: 5]. Criticising the simplicity of the model of innovation processes, the reducing of knowledge to scientific knowledge and the
instrumentalisation of science\textsuperscript{71} doesn’t imply to defend the ivory tower model of science. The science system must respond to the challenges in its environment.

Another cornerstone to achieve the transition to the knowledge economy is “modernising the European social model, investing in people and combating social exclusion” \cite{lisbon}. In this European social model, education and training has a main function to adapt the European population to the knowledge society\textsuperscript{72}. “Europe’s education and training systems need to adapt both to the demands of the knowledge society and to the need for an improved level and quality of employment. They will have to offer learning and training opportunities tailored to target groups at different stages of their lives: young people, unemployed adults and those in employment who are at risk of seeing their skills overtaken by rapid change” \cite{lisbon}. In spite of the relevance conceded to education and training, both are not considered as driving forces of social change. Education and training must be adapted to the knowledge society, to an imaginary model of economy - society based on the technological progress.

The short revision of the Lisbon declaration confirms the impression that the Commission and the EU sustained a technology driven concept of knowledge society confusing this concept with the information society. This impression is confirmed through other Commission Work staff document published in 2003 under the title “Building the Knowledge Society: Social and Human Capital Interactions” \cite{2003a}. This document simply started from the assumption that the evolving penetration and impact of new information and communication technologies has changes the work and the social-economic life. It started from the oversimplifying assumption: the increasing use of the ICT and the Internet has provided a socio-economic change in the EU and the world society, which caused a incrementiong need of knowledge and learning to handle the increasing information flow. This is the reason, why the education and training policies becomes even more important in the EU-politics, but not as a driving force of social change but as support of the strategies towards an information society based on commoditised knowledge. Starting from this simplified concept of the social-economic changes, the EU-policies don’t take in account the whole social problematic of the shift to the knowledge society. The gap of clarification could be explained by various reasons:

In the background, the EU is still using the technology driven concept of the information society, but faced the need to use a new label in accordance to the socio-economic changes and emerging social science discussions in turn of the knowledge, network and learning society. The EU switched from the information economy to the knowledge based economy, which opens the

\textsuperscript{71} “The instrumental vision of science’s meaning and rationale goes back to its origins in the 17\textsuperscript{th} century Europe.” \cite{felt:14}.

\textsuperscript{72} In this part, the Lisbon declaration switches from the term knowledge economy to knowledge society.
possibility to include in this concept the commoditisation of science knowledge maintaining the technology driven approach.

It responds to the political need to express a vision to guide the political strategies in different action fields. The ambiguous use of the term knowledge society - economy opens the possibility to integrate different political strategies under one umbrella and justified heterogeneous strategies from competition policy over employability and inclusion to maintaining cultural diversity and subsidiarity as well as social cohesion. But these strategies are relegated to a secondary relevance behind the liberal strategies towards deregulation and market driven policies oriented.  

2.3. Insights of national discourses about the knowledge society

We have described until now a part of the European discourse under the label of the information society/economy and knowledge society/economy. It is assumed that in all countries, there is a social science discourse about what knowledge society/economy is. This scientific discourse will differ from science area to science area and will probably have also some specific outlines depending on the concrete social-economic environment. Here is not the place to go in depth in these differences. But, the NESOR-project pretends to outline briefly what are the public discourses in the different countries (and regions) of the European Union about the knowledge society. It was assumed beforehand that not only at least partly different terms are used, but also that the terms used in each country about the knowledge society at least also give some indication about the most important matters in this respect.

The collection of the six countries involved in the project is not based on pure scientific choice criteria, but is largely accidental as is more often the case in European projects. Nevertheless, we can take some advantage of the fact that the group of six countries is divided in at least three different types of welfare states. Austria and the Netherlands can be seen as countries that belong to the family of economically well-developed continental welfare states. Inversely, Hungary and Poland are two new accession countries still catching up with the more wealthy EU-countries. Finally, Italy and Spain are Mediterranean welfare states, in which the role of the family still predominates above the role of the state.

73 The political concept of knowledge society/economy established a hierarchy of social systems, in which the economy based on continuous technological innovation is the leading system to which the other systems must be adapt. This neglects the complex interrelations between the different social systems, which couldn’t be conceived through linear models.

74 Main parts of the following chapter are taken from the Comparative Report of work stage 2 of the NESOR-project elaborated by Eric de Gier and John Warmerdam.
A second relevant indicator is the distribution of the active population among the ISCED-categories, through which the qualification level of the countries are statistically expressed. **Italy** and **Spain** are pertaining to the group of Mediterranean welfare regimes characterised by a high degree of low qualified active population. But Italy disposes in comparison to Spain of a high number of medium qualified active persons. Spain has an unusual high number of high qualified active persons. It is the only EU-country in which the percentage of the group of active persons with an ISCED 5_6 certification is higher than the corresponding group of ISCED_3_4. In this regard, Spain is unique in the EU.

### Table 3: Active population by sex, age groups and highest level of education attained (in % over Total between 15 and 74 years)

<table>
<thead>
<tr>
<th>ISCED-level</th>
<th>0_2</th>
<th>3_4</th>
<th>5_6</th>
<th>0_2</th>
<th>3_4</th>
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<th>0_2</th>
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<td>8.6%</td>
<td>25.0%</td>
<td>61.7%</td>
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<td>9.5%</td>
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<td>-7.8%</td>
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<td>36.5%</td>
<td>-8.0%</td>
<td>3.4%</td>
<td>4.5%</td>
</tr>
</tbody>
</table>

Source: Eurostat
Austria, Hungary and Poland are forming a group of countries with a low percentage of high qualified active persons and a high level of medium qualified active persons. This seems typical for the German speaking countries and the former communist countries. These countries have traditionally well-developed vocational training systems. Here, higher education follows, in so far, still the pathways of elite education. However, we can observe that the post-communist countries have, in general, incremented considerably their percentage of high qualified active persons between 2000 and 2007. On the contrary, Austria as well as Germany shows only a moderate increment of the high qualified active population.

At last, the Netherlands is an example of the country group with a high percentage of high qualified active persons, a medium level of medium qualified active persons and also a medium level of low qualified active persons. Besides the Netherlands, Luxembourg, France, the United Kingdom, Ireland, and Belgium are part of this group.

<table>
<thead>
<tr>
<th>Country</th>
<th>GCI-score 2007-08</th>
<th>GCI-ranking 2007-08</th>
<th>GCI-ranking 2006-07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>5.40</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Austria</td>
<td>5.23</td>
<td>15</td>
<td>18</td>
</tr>
<tr>
<td>Spain</td>
<td>4.66</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>Italy</td>
<td>4.36</td>
<td>46</td>
<td>47</td>
</tr>
<tr>
<td>Hungary</td>
<td>4.35</td>
<td>47</td>
<td>38</td>
</tr>
<tr>
<td>Poland</td>
<td>4.28</td>
<td>51</td>
<td>45</td>
</tr>
</tbody>
</table>


Another interesting indicator is the ranking and score of the six countries involved in the project on the Global Competitiveness Index [World Economic Forum 2007]. The Global Competitiveness Index 2007-2008 (GCI) provides a weighted average of the complex reality that is called competitiveness and is based on 12 different pillars. It shows that some countries are much more successful than other countries in raising income levels and opportunities for their respective populations. The first 4 of the 12 pillars belong to the first stage of development in which the economy still is factor-driven. It concerns the following four basic requirements: institutions, infrastructure, macroeconomic stability, health and primary education. The second stage of development is the efficiency-driven stage of development, consisting of the following six efficiency enhancers: higher education and training; goods market efficiency; labour market efficiency; financial market sophistication; technological readiness; market size. Finally, the

75 The exceptions are Lithuania, which has reduced the weight of the high qualified active persons in turn on 10% starting however with a unusual high level of high qualified active persons. The other exception is the Czech republic, which shows only a moderate increment of the high-qualified active population similar to Germany and Austria.
third phase is the stage of the innovation driven economy. This stage consists of the following two innovations and sophistication factors: Business sophistication and innovation.

According to the actual scores Poland is listed in the second stage of development, Hungary is making a transition from stage 2 to stage 3, and the four remaining countries all are listed in stage three of development. Apart from the divergence between the six countries, they all face the same ‘common’ (to some extent converging) challenge of the EU-wide intention to become by 2010 according to the Lisbon-goals the “most competitive and knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion”. On this background, we present now insights of the national discourses about the knowledge society.

2.3.1. Austria

As in other European countries, in Austria knowledge is recognised as the driver of productivity and economic growth, leading to a new focus on the role of information, technology and learning in economic performance. Education will be the centre of the knowledge-based economy, and learning the tool for individual and organisational advancement. Essential in this respect is that learning is more than just acquiring formal education. Continuous learning-by-doing is paramount. Another related aspect is that in the knowledge society access to information will become much easier and less expensive. It then becomes crucial to master the know-how skills that can transform codified knowledge into applied knowledge.

In Austria, as elsewhere, the knowledge society implies a shift from production to the delivery of services. Contrary to the production economy, the service economy is less hierarchical, more skill-intensive, and more flexible. Occupations will become more high-information jobs. The accompanying political and scientific debate in Austria is partly optimistic and partly pessimistic. The optimists mainly focus on the opportunities provided by these changes, whereas the pessimists point to new inequalities that may arise in the transformation process.

The knowledge society is outlined as the technological, economic, political and social changes associated with the implementation of ICTs. Both pessimists and optimists agree on growing complexities with regard to the development of employment, social welfare, social justice, social economies, education and vocational training. A commonly shared policy goal is the need for a learning society that is able to anticipate on a type of innovation, which is not primarily linear, such as the traditional innovation theory states, but open. In the open type of innovation ideas for innovation can stem from many sources, including new manufacturing capabilities and recognition of market needs. It can take many forms, including incremental improvements to existing products, applications of technology to new markets and use of new technology to
serve an existing market. Open innovation requires considerable communication among different actors: firms, laboratories, academic institutions and consumers, as well as feedback between science, engineering, product development, manufacturing and marketing. The national Austrian innovation system therefore can be seen as the result of numerous interactions by a community of actors and institutions.

2.3.2. Hungary

Although there is a lot of attention in Hungary to knowledge society and many different terms are used simultaneously (knowledge society, information society, new economy, network economy and learning economy), it is not easy to discern a clear-cut picture of the discourse on the knowledge society. This is mainly due to the fact that there is a lack of consent with respect to both the notion of the concept and the content of knowledge society. Apart from the regular optimistic and pessimistic views on the gains and losses of a knowledge society, there is a third influential school of thought, which might be classified as the sceptic view on knowledge society. This group of commentators is questioning the fundamental diffusion of the knowledge and creativity driven economy. On the one hand, in Hungary the competitiveness strategy based on low skills and low wages remains an economically viable development and on the other hand there is also the increasing importance of high skills in the knowledge society that requires quite a different strategy with respect to education, learning and competitiveness.

The main consequences of this dual (sceptic) view are twofold. First of all, by mixing both old and new economic policies Hungarian innovation policies have mainly focused on developing industrial, technology, science and educational policy without any respect or links with workplace development and investment in workforce skills. Because of that innovation remains one-sided. As a corollary, for knowledge society important strategic partnerships between government, business and higher education institutions are profoundly underdeveloped. Secondly, the system of higher education is insufficiently demand driven and still overwhelmingly supply driven and doesn’t anticipate to the needs and demands of the changing labour market. Only recently, in particular polytechnics are attempting to change by developing stronger ties with the business community and the public administration.

An accompanying problem is that university-based research resources still are relatively weak in Hungary. R&D expenditure per capita in the higher education sector (HES) remains substantially lower than in all other countries involved in this project, save Poland. Whereas in 2004 Hungary spent 18 € per capita for R&D in the HES, the other countries spent €152 (Netherlands), €175 (Austria), € 59 (Spain), € 86 (Italy) and € 9.5 (Poland).
2.3.3. Italy

In Italy the concept and the importance of the knowledge economy or the knowledge society is well acknowledged. However, the country slowly exploits the chances offered by the transformation, which is taking place. Both private and public investments in R&D and in higher education are very low. The low private investments in R&D are due to the fact 80-90% of Italian companies are small or medium sized companies.

Knowledge is seen as one of the most relevant production factors that are important for long-term economic growth. In this respect, the availability of young high-educated people is perceived as crucial for economic development as well as for social cohesion.

A particular problem for Italy is the demographic ageing process at the national level. The overall number of young people is permanently decreasing. This development does not imply a better economic and social position of young Italian people. In general, they are not valued as a scarce and precious resource. Young Italian graduates, seen on the average, later find a temporary and subsequently permanent job than their EU-homologues. They also earn less and have more chances to be unemployed.

The knowledge concept is, similar as in different other European, focused on innovation through human capital development. This implies a balanced and continuous upgrading of technical skills and relational and entrepreneurial skills. Still much has to be done in this respect. For instance, only one out of five Italian workers takes part in training courses (EU-average: 40%); and only 25% of Italian companies offer some kind of vocational training (EU-average: 60%).

The Italian government has recently initiated two major changes to tackle the main problems. These are the labour market reform and the reform of the university curricula. We will return on these issues in the paragraphs on social risks and on higher education respectively.

2.3.4. The Netherlands

In the Netherlands the leading concept of the discourse on the knowledge society is not information society or network society, but innovation or innovative power of the Dutch economy. It is neither an exclusive academic discussion, nor a pure policy debate. Both politicians and policy makers on the one hand and scientists on the other hand take part in the discourse on the knowledge society.

The most important issue in the debate is the relative position of the Dutch economy in the ranking of best performing knowledge economies. All relevant stakeholders (politicians, employers, trade unions, universities and polytechnics) part the same definition of the situation,
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which is that the Dutch economy in principle belongs to the top-performers in the world as it concerns knowledge production. However, if it comes to useful applications or making scientific and academic knowledge applicable industry, the performance is substantially less. This is perceived as a knowledge or innovation paradox that has to be solved as soon as possible to prevent that the Netherlands falls back internationally.

To be able to resolve the innovation paradox government created a few years ago the so-called Innovation Platform (IP) in which all societal stakeholders participate. This IP produced a large number of reports on various aspects of the knowledge society, such as how to solve the problems of secondary professional education, or how to facilitate valorisation of research knowledge.

The work of the IP, headed by the Dutch prime minister, recently culminated in the Knowledge Investment Agenda 2006-2016. This investment agenda foresees additional annual investments of 3 billion Euros as regards to the following four themes:

- Financial means of universities have to be distributed more on the basis of quality and less on the basis of the number of students per university. At the same time, there has to be invested more money in research infrastructure; the influx of young scientific talent has to increase, and finally science and industry will have to increase and widen their interaction,

- The Netherlands has to make choices for big research facilities that can compete internationally.

- The accessibility of the country for foreign knowledge workers has to be increased.

- Scientific knowledge has to be used more effectively.

In the years to come the Knowledge Investment Agenda has to be implemented and realised. Although all relevant stakeholders have formally undersigned the agenda, which implies that there exists a broad national consensus, some of them express some doubts about its chances on success. Vested interests are very strong and the Government itself is confronted with many other priorities.

There is also another aspect to be taken into account and that is that there is evidence that 50-75% of innovation of industry not only is dependent from technological innovation, but also from wa is called social innovation. Social innovation is defined as changing a firm’s organisation, management and labour in a way that is new to the organisation and/or the industry, with the effect of leveraging the firm’s technological knowledge base and improving organisational performance.

Also the IP recognised the importance of this ‘soft’ factor and has underlined its significance for resolving the innovation paradox and the need to improve productivity of industry by
(modestly) financially supporting a newly established Netherlands Centre for Social Innovation (NCSI). This Centre brings demand and supply of knowledge together.

Summarising the discourse of the knowledge economy in the Netherlands, first of all it can be concluded that the Netherlands expresses a strong ambition to belong to the top league of best performing knowledge economies in the EU. However, the innovation paradox (the existing gap between knowledge production and knowledge application) is an important impediment to be solved first. Although there is a broad common consensus about the need to resolve the innovation paradox, the road towards this is paved with some scepticism. An important key for future success in this respect is the recognition and implementation of social innovation.

2.3.5. **Poland**

The concept of the knowledge society does not occupy a prominent place in the public discourse of the Polish key actors. The term as such, seldom appears in scientific and public discourse. To understand this, it is important to realise that Poland, as a rather new accession country of the EU first of all needs to catch up with the wider social and economic development of the EU. This is perceived as an absolute priority over creating a knowledge society. Poland primarily wants to master its comparative backwardness in the socio and economic field by means of utilising EU-funding resources (structural funds). The Polish actual socioeconomic environment is characterised by:

- Low level of innovativeness of the Polish economy as measured by the % of so-called innovative enterprises and the participation of high-tech export products
- Very low outlays on the R&D sector (-0.345 GDP ratio)
- The lowest % of people with secondary education among the EU countries (30.6%)
- Low % of people with higher education (10.2%)
- High rates of functional illiteracy among Poles
- A low % of students choosing studies in the fields of mathematics, science and engineering
- Limited access to the Internet
- Only 17.3% of employees are knowledge or information workers (2003)
- Poland is the least advanced country in terms of building the G knowledge society (World Bank)

Nevertheless, there is some, but not very popular, scientific and public debate about the significance of creating a knowledge society in Poland on the longer term. In this debate several terms referring to knowledge society are used alternately, such as: information society, new economy, learning society, web society and knowledge-based economy.
Also attention to realising knowledge society is paid in the various national and regional or local development and operational plans (National Development Strategy 2007-2015; National Reform Program 2005-2008, etc.), for instance, by linking it directly to the objective of growth of competitiveness and innovativeness of the economy (increasing R&D expenditure, strengthening cooperation of scientific and research entities with enterprises, targeting research expenditures). Another important objective in the national development strategy is the promotion of life long learning with the objective to increase employment and also the quality of employment. However, in the entire relevant strategic government documents, higher education institutions play a fairly marginal role. This is caused by the fact that education is hardly seen as a basic factor for modernisation of the society and the economy.

2.3.6. Spain

Spain is fully aware of the need to catch up timely with the knowledge society. The policy of the country aligns with the EU-policies. Although different terms are used for the knowledge society, the most widely used are information society, knowledge society and network society. The latter is seen as an equivalent to knowledge society. Not only government is actively involved in the transformation of Spanish society into a knowledge society, but also industry. For example, the Foundation Telefónica, is also actively engaged in the implementation of the knowledge society. Since the year 2000 the Foundation publishes annual reports about the progress towards the knowledge society. The Foundation Telefónica defines the term information society as ‘a state of development characterised by the capacity of its members (citizens, enterprises and public administration) to obtain and share immediately any information from any place and in the preferred form’. According to the Foundation Telefónica, Spanish society moves from a productive to a services economy (or from the production of tangible products towards tangible services). This also implies unrestricted technological capacity of access to resources of information and to information itself. As a consequence this new technological capacity will provoke a profound technological driven social transformation of Spanish society. As in other European countries undergoing the same transformation, knowledge society will be based on knowledge and learning or permanent up-dating of the once acquired knowledge.

Apart from industry, during the last decades, also respective Spanish governments and the respective governments of the autonomous regions have put into action several programs to improve the Spanish science and technology system. The most recent is the New National Plan 2008-2011. In this plan telecommunication and the information society are jointly defined as a
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strategic area. The NNP is framed in a more ambitious program called Ingenio 2010 and which contains, for example, the following objectives:

- Achieve in 2010 2% of GDP devoted to R&D
- Achieve in 2010 55% private investment of whole Spanish R&D
- Achieve in 2010 0.9% of public investment R&D
- Achieve the EU-average in % of GDP devoted to ICTs.

In spite of all efforts, statistical indicators show that existing differences with other European countries could not be bridged during the last years. For instance, the number of households with Internet access, with or without broadband access, remains behind the EU-average. This is partly due to the existing gap in the knowledge transfer from the public to the private sector, caused by an insufficient link between the public and the private sector.

2.3.7. Similitude and Differences in the national discourses about knowledge society

Overlooking the insights of the knowledge society/economy discourse in the NESOR-countries we can paint the following picture. Indeed, there are strong differences in dealing with the knowledge society between these countries. At the same time we can discern some common denominators. First of all the differences, we can distinguish between two sorts of differences. On the one hand, as also is shown in the ranking of the Global Competitiveness Index there are significant differences in development. The Netherlands and Austria seem to be clearly ahead on the road toward the knowledge society, whereas Italy and Spain take some middle position and Hungary and Poland for the time being can be seen as laggards. These last two countries are confronted with other more basic economic and social problems and will have to put almost all effort into catching up with the better performers.

On the other hand, we can see that the differences are at the same time very country-specific. For instance, the discourse on the knowledge society in the Netherlands is almost entirely focused on the need to solve the so-called innovation paradox. If the country succeeds, nothing will stand in the way to return to a European top position in the ranking of best performing knowledge societies.

In Austria, the knowledge society is outlined as the technological, economic, political and social changes associated with the implementation of ICT’s. Knowledge is recognised as the driver of productivity and economic growth. Education in conceived as one of the centre of the knowledge-based economy, and learning the tool for individual and organisational advancement. Essential in this respect is that learning is more than just acquiring formal education. Continuous learning-by-doing is paramount. A commonly shared policy goal is the
need for a *learning society* that is able to anticipate on a type of innovation, which is not primarily linear, such as the traditional innovation theory states, but open. The open innovation system requires considerable communication among different actors: firms, laboratories, academic institutions and consumers, as well as feedback between science, engineering, product development, manufacturing and marketing.

In **Italy** the concept and the importance of the knowledge economy/society is well acknowledged. But the transition to the knowledge society is quiet slow measured in indicators as public and private investment in R&D or in higher education. Knowledge is seen as one of the most relevant production factors for long-term economic growth. The knowledge concept focuses on innovation through human capital development and the availability of young high-educated people is perceived as crucial for economic development as well as for social cohesion. The function of the human capital development for the economic development and social cohesion implies a balanced and continuous upgrading of technical skills and relational and entrepreneurial skills. But this strategy is still not well attained and shows a lack in respect to the EU. And the strategies of up-grading the education level are no accompanied by a better economic and social position of young high-qualified people. Young Italian high qualified are working more frequently and more time in precarious work conditions (for instance temporary work, earnings and unemployment rate) than their EU-homologues.

**Spain** followed in the discussion of the knowledge society, the pathways of the EU. First, it based its modernisation policies on the technological development of the ICT-infrastructures, diffusion of ICT-application and the deregulation of the telecommunication markets. Parallel and framed with the democratic transition process, the Spanish society became higher qualified based on the increment of number of students in higher education. Only in the recent year, the term of knowledge society gained relevance in the Spanish discourse in the interpretation of a science based information society. For this reason, the government has approved an ambitious programme to nearer the Spanish R&D-system to the European frontrunners. However, similar to Italy, the recognition of the relevance of knowledge and qualification for the socio-economic development, the labour market for the high-qualified workers is compared to other European countries characterised by the precarisation.

In **Poland**, the discourse around the knowledge society is put in the background in favour to the absolute priority to master its comparative backwardness in the socio and economic field by means of utilising EU-funding resources (structural funds). Nevertheless, there is some, but not very extended, scientific and public debate about the significance of creating a knowledge society in Poland on the longer term. And also various national and regional or local development and operational plans (National Development Strategy 2007-2015; National Reform Program 2005-2008, etc.) pay attention to realising knowledge society, for instance, by
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linking it directly to the objective of growth of competitiveness and innovativeness of the economy (increasing R&D expenditure, strengthening cooperation of scientific and research entities with enterprises, targeting research expenditures) and to the promotion of lifelong learning with the objective to increase employment and also the quality of employment.

In Hungary a lot of attention is paid to the knowledge society under different terms. However, a lack of consent around the concept and the content of knowledge society is observable. Besides optimistic and pessimistic views, there is a third group of commentators sustaining a sceptic view on knowledge society questioning the fundamental diffusion of the knowledge and creativity driven economy. The problem is linked to the dual structure of Hungarian productive model: on part is based on low skills and low wages as the critical variable for an economically viable development. The other part pleads for the increasing importance of high skills, which requires a strong strategy focused on education, learning and competitiveness.

If we look to common denominators a lot of points have to be mentioned: First of all, there is not one commonly used term in the national discourse of the knowledge society. A wide array of terms is used everywhere, such as information society, knowledge economy, network society, etc. Secondly, there seems to be a broad consensus about the traditional task of the education system in preventing social inequality. If we look to practical policies and intentions, we see that in all countries stimulating life long learning and improving the employability is defined as a top priority. The lack or neglect of attention for life long learning and neglecting the importance of employability in increasing flexible labour markets could be seen as new social risks in the knowledge society and because of that it is understandable that the countries in this project want to ‘engineer’ these issues seriously in the context of the knowledge society. Nevertheless, a lot still needs to be done. Life long learning still isn’t a proven practice in almost all countries in the project. Al in all, the resulting picture is not convincing across the board if we assess it from the ambitious Lisbon and Bologna intentions. The idea of knowledge society is almost everywhere embraced, but practical and institutionalised impediments prevent a rapid realisation.

2.4. Knowledge society: a guiding vision for higher education?

This chapter exposed a clear distinction between the social science concept of information society/economy and knowledge society/economy and the political label used in the European debate about the social-economic modernisation. It was argued that the social sciences are
nourishing the political discourse\textsuperscript{76}, but that the political discourse follows its own pathways integrating only part of the social science discourse and evidences.

It was argued that the political concept of the knowledge society/economy handled at the EU-level is a further step of the policy under the label of information society adding the commoditisation of knowledge and the relevance of scientific knowledge for the competition between economic areas. The use of the labels information society/economy or knowledge society/economy at the level of the EU indicates ideological implications. The brief discussion of some main EU-documents showed these concepts are technologic and economic driven. Under the label of the information society, the technological development especially the massive application of the ICTs appears as the panacea to resolve all social problems and to achieve a more social balanced European society.

The information society as guiding vision of the EU-policies came into the scene in the 1990’s following the pathway marked by the Clinton-Gore government in the USA. The Bangemann-report is in the 1990’s the guiding document of the EU-information society policies. This report used the term information society in a liberal sense putting emphasis on the market and the deregulation. The information society and the promises of a better society are used to promote a profound societal change following liberal guidelines. Besides the support of technological developments, one step of the European development of the information society was the deregulation of the telecommunication sector reducing the national state influence in this market. Another step was the deregulation of the labour markets towards a higher flexibility, which is, so the argument, necessary to achieve a high efficiency of the information and communication technologies.

The third step, having it mayor expression in the Lisbon strategy, is the change of the European social model from passive mechanism of social protection against social risks like unemployment, illness, poverty etc. to mechanism of activation improving the employability. The objective is to improve the employability of the citizens through lifelong learning policies adapting the competence to the continuously changing requirements of the knowledge society/economy. But this strategy is framed in the context of state budget restriction imposed by the Maastricht criteria, which conduced to stricter limitations in the access to passive protection. It implies the reduction of the role of the state – considering also the EU as a state mechanism – to maintain the social balance within the European society. It expressed the liberal ideology of the responsibility of the individuals for their own destination denying the strong social class orientation of the European societies.

\textsuperscript{76} The Japanese origins of the information society concept shows clearly the link between social science and policy development in respect to the concepts of information society and knowledge society
In the process, however, the label of the EU-policies has changed from the information society/economy to the knowledge society/economy. This changes expressed the perceived limitation of a policy concept focused exclusively on technological aspects, the EU changed the label towards the knowledge society/economy. In spite of that the Lisbon strategy put higher education at the hart of the new strategy, it is used as an economic tool. Knowledge and education is primarily conceived “as a commodity to gain competitive advantage and not to be raise knowledgeable individuals” [Musial 2009]. The new label put more emphasis on the education, training and learning to support the transition to the European knowledge society, emphazing overall the role of research, development and innovation for the competitiveness of the EU within a globalised economy. Under the label of the knowledge society/economy, the EU is promoting a liberal science based information society. The focus of the economically driven agenda of the Lisbon strategy is to reinforce the research activities and to improve the link between academic research and economic world (resolving the innovation paradox). In this sense, we can talk about an enriched concept of the information economy: a science based information economy.

**Figure 12: Driving forces of the science based information economy**

<table>
<thead>
<tr>
<th>Scientific based information economy</th>
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<tbody>
<tr>
<td>Driving forces of socio-economic changes</td>
</tr>
<tr>
<td>Technological Innovation</td>
</tr>
<tr>
<td><strong>Supporting measures</strong></td>
</tr>
<tr>
<td>- liberalisation of markets</td>
</tr>
<tr>
<td>- new social model</td>
</tr>
<tr>
<td>- life long learning - employability</td>
</tr>
<tr>
<td>- education</td>
</tr>
</tbody>
</table>

Education and especially higher education aren’t seen as a driving force of socio-economic modernisation, but as a support of the modernisation processes to achieve a social balanced process. The EU pleads for a production model based on high-qualified workforces supposing that jobs requiring high qualifications are per se better jobs. The EU pleads also for a liberal
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social model, in which the citizens are responsible for their possibilities to be in the labour market. The role of the education institutes, including the higher education, is to provide the structures so that the citizens can update their competences and improve continuously their employability during their whole work-life.

The discussion about how to increment the expenditure in education, in which one of the main road is the increment of the private expenditure, is an indicator that this concept of the scientific base information society advocates not only for the commoditization of knowledge in the line of classical economic approaches, but also for the commoditization of higher education. That implies a restricted access to higher education opportunities. This strategy is contrasted through the political strategy towards social equity and it seems still an open question, how to resolve both objectives.

The resulting picture of the analysis of the insights of the national discourses about the knowledge society is not convincing across the board if we assess it from the ambitious Lisbon and Bologna intentions. The idea of knowledge society is almost everywhere embraced, but practical and institutionalised impediments prevent a rapid realisation. However, we can observe general discussion trends, which have more or less relevance in the countries depending on their socio-economic environment:

- It seems that the discourses of the knowledge society gave more priority to the research than to the higher education area. The discussion about the innovation paradox or the open innovation indicates the high relevance conceded to the research in general, but more specifically to the linkage between academic research and practical applications. Also Hungary, Italy and Spain are, in certain manner, examples for the given priority to research. The current Spanish government has approved an ambitious programme bringing nearer the Spanish innovation system first to the EU-average and then to the European frontrunners. This is framed in the declared objective to change the Spanish production model from a model based low qualified workforces to high qualified workforces. Also the discussion in Hungary about the duality of the production model indicates that there is a trend to prevalence given to the research to promote the knowledge society.

- It seems that the differences in the discourses of knowledge society are related to the differences in the social production model of the countries. The Netherlands and Austria based their social production models on high qualified workforces. Hungary, Italy and Spain all have dual structure, with a strong focus on a social production model based on low qualified workforces, but with a trend to reinforce the segment of high qualified work. Poland seems to be still a traditional social production model with a focus on medium qualified workforces.
The social function of higher education in the social models of the European knowledge society

- The discourse of the knowledge society is centred strongly in the life long learning policies to support the transition to the knowledge society and to adapt the competence structure of the workforces to the continuously changing requirements of the emerging knowledge society. The degree of implementation is varying form country to country, but in accordance to the EU-policies, the education and training policies are focused on the improvement of life long learning provisions.

- Italy and Spain are examples that the assumption expressed in the Lisbon declaration, that higher qualification conduces to good jobs, isn’t valid for each country and socio-economic environment. In both countries, the young high qualified workers are also exposed to precarious work conditions. It is true, that the degree of precarisation is lower in the case of the high qualified workers compared to low qualified and medium qualified work forces, but these type of labour relations can be considered as normal for high qualified workers in both countries

### Figure 13: Basic assumption of the concept of knowledge society

<table>
<thead>
<tr>
<th>High disposition to put in question tradition and norms</th>
<th>High capacity of social action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social action are more legitimated through knowledge (rational arguments) than through traditions and norms</td>
<td></td>
</tr>
<tr>
<td>Increasing social innovation capacity</td>
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</tbody>
</table>

Webster [2003] and Heidenreich [2000] argued that it is still not evident, what knowledge society really means and how the transition towards the knowledge society is measured. The critics against the concept of knowledge society do not deny a profound change in the actual society. A common denominator is that the societies are experimenting an accelerate change putting in question many of the formerly accepted traditions, norms and regulations. However, it seems quite unclear, if these changes can be classified as information or knowledge society. It is criticised that the steps towards a knowledge society can’t be measures by quantitative indicators as number of scientist, scientific knowledge production etc. These indicators only confirm (or not) the constitution of the system of scientific knowledge production by its own and a trend to the commoditisation of knowledge, but not the transition to a knowledge society.
The sociological approach of the knowledge society goes beyond the statement of the growth of information and knowledge use in the modern society. It sustains that one of the essential of knowledge society is the oscillation between deconstruction and reconstruction structures, traditions, norms and rules. For this reason, the concept of knowledge society, to be valid for the description of the actual modernisation process, must focus on the accelerated and constant erosion of its regulations structure, traditions and norms as well as the constant reflection about known procedures and processes.

Based on the sociological approach, the argumentation on the information society/economy and knowledge society/economy can be turned around: Going back to the origins of the concept of the information society, in which it is stated that the industrial society has changed to a post-industrial society or information society, in which the non-industrial sectors has increment their weight in the national GDPs and the occupational structure has changed increasing the degree of the so-called knowledge workers. The economic processes have changed in respect to the products demanded by the population. The products with a high functional value are loosing relevance in favour to products with a high informational value. The technological development hasn’t be identified as the only factor of socio-economic change in the industrialised society. Taking up an argument of Parsons & Platt, the educational revolution – generalisation of primary and secondary education and expansion of the higher education - is perceived together with the political revolution and the industrial revolution (technological revolution) as the...
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driving force of modernisation. The increasing education level of the population changes the forms of legitimation in the societies switching from traditional norms and values to a reflexive process, where the tradition and norms are under revision and re-constructed. And the general increment of the education level of the population laid the ground for the later technological development based on ICTs. Implicit is the hypothesis that the massive application of ICTs wouldn’t have been without the incremented general level of education of the population in the industrialised societies. This point of view doesn’t deny the impact of the technology on the societies. But it conceives education, technological development and political changes as interrelated driving forces of modernisation. Education and higher education are driving forces and not only supporters for modernisation.

In the actual discussion about the role of higher education in the transition, three main issues stand in the foreground:

a) The contribution of the higher education to the economic progress through the delivery of scientific and technological inventions. This debate is focused on the contribution of the research done in the higher education system to the scientific and technological innovation putting in the background the question the educational aspect. But under the strict aspect of education and training, the question turns around the interrelation between higher education and science system.

It can be considered that the main function of the modern science system is the generation of new knowledge applying standards of scientific rationality. This requires specific patterns of social behaviour, which is transmitted through higher education and/or acquired through the specific socialisation in the professional practice. Higher
education has, in this sense, the function to transmit patterns of social behaviour corresponding to the scientific profile.

Studies realised within the approaches of the Mode 2 of scientific knowledge production and the triple helix indicates that the science system is changing and in so far also the patterns of scientific behaviour: the scientific profile. This requires an adaptation of the curricula of higher education. Using the distinction between general and specific competences, this discussion insists in the reinforcement of general competences as social, communicative or networking competences.

b) The second main debate is the relation of the higher education to the economic system. Talking about higher education in the strict sense, this debate is focused on the adaptation of the curricula to the labour market requirements. It is related to the effects of the expansion of the higher education on the labour market. Historically, higher education was oriented to provide work force for the public administration and public services (education, health and jurisdiction) including public science, but the expansion of higher education together with the public budget retreatment has increment the private labour market segment for graduated workers. This incremented the complexity of the relation between higher education and labour market.

However, the relation between higher education and labour market are not simply. Ulrich Teichler stated the impossibility of a constant adaptation of the higher education to the labour market requirements.\textsuperscript{77} One of the main arguments is that neither the decision makers in the economic systems - entrepreneurs and trade unionist - are sure what are the concrete professional requirements. Psacharopoulos [1991] stated “every country in the world has attempted, one time or another, to improve the fit between education and work [...] The effect of ability and related factors does not exceed 10 percent of the estimated schooling coefficient. Instrumental variable estimates of the returns to education based on family background are higher”. In systemic terms, it can be stated that the mayor problem consists in the different logics impregnate in the two systems.

Higher education is characterised since the 19\textsuperscript{th} century by its constant expansion. It is focused on the socio-economic status attributed to the graduation or the PhD’s. The

\textsuperscript{77} Teichler (1999) arguments: "employers tend to focus on short-term demand. Also, they are often inclined to underestimate the educational level of competences they actually like to recruit, and they often depict primarily shortages of competences felt rather than the complete range of competences required. Further, they tend to point out strongly the need for those competences, which keep them busy to measure in the recruitment process, i.e. personality traits and social skills. Finally, they often put undue emphasis on those competences which are needed in many positions, thus being inclined to overestimate the role social skills and personality play and to underestimate the cognitive skills and the knowledge basis for specific fields which the institutions of higher education might provide and also might measure and indicate through credentials"
tight relation to the science system imposed it flexible organisation in knowledge areas. The weight of the different knowledge areas is not only a political decision, but depends on the decision of the students, who are, in so far, an active element in the configuration of the system.

The economic systems are characterised by short, medium and long economic cycles, which change constantly the distribution of its activities between economic sectors. Within the system exist a high structural flexibility between the economic sectors. It is focused on benefits and the growth of benefits and the work forces are conceived as resources, which can be adapted to the requirements of the system.

These different systemic logics imply also different time perspectives of the actions in both systems. The decisions taken in the economic system have more a short-term dimension meanwhile the decisions in the higher education system have a mid or long term dimension.

The different logics of action in both system as well as the different time perspective make it improbable, that the higher education system can react to the requirements of the economic systems as the economic stakeholders required. Both are autopoietic systems, which must translate the external requirements in the internal communication processes. In so far, the search for a better matching of education and employment is similar to the search for the Holy Grail. [Mariani – Łódź 2008].

Another strand of this debate around the mismatch between higher education and labour market is related to the discussion of the knowledge society and learning society stating a need of a continuous up-date of the knowledge. That requires that the higher education systems developed coherent strategies of lifelong learning.

However, one of the main problems of this focus is that it conceived the relation between higher education and economic system as a one-way relation: higher education must be adapted to the requirements of the labour market. This has one of its main expressions in the arguments of the over-qualification or under-qualification of the work forces advocating for the adaptation of the higher education to the demand of the labour market. But this argument can be turned around asking for the measures to adapt the economic systems to the education supply. The cases of Spain, Hungary and Poland shows the need to think about economic and political measures to use the whole potential of the graduated work force supply for the change of obsolete socio-economic production model.

c) The third focus of the debate of higher education is his function for social policy. As education in general, also higher education has in the political discourse a function to
achieve higher social equity and social mobility. From the beginning of the modern university on higher education has been a vehicle of class struggle. In the 19th century it was a mechanism to assure the social position of the civil class first against the aristocracy providing upwards-social mobility and later against the working class, maintaining the privileged position of the bourgeoisie. This has had its reflection in the increasing internal diversification of the higher education system, e.g. elite universities [see Stichweh and Windolf], in the introduction of new selection mechanism and additional post-graduate education and training. Education as a mechanism of social equity in the civil society is based on meritocracy. The individuals are considered equal at the beginning of the educational career and they are selected in the course of their careers by the acquired merits certified by academic titles. In so far, the individual efforts are considered as the primary mechanism of social selection in the civil society. Recognising that the children of a lower and lower middle class has less material chances to promote in the education system, financial support (and other types of support) is offered to children of these social classes, but without questioning the basic principal that all children starts from the same position and that its their own merit achieving a good educational career.

Which is less discussed in this debate, is the function of higher education to mitigate the new social risks emerged in the course of the profound socio-cultural and economic changes in the last decades. The concept of the transitional labour market, for instance, stated a trend to frequent changes in the labour market status of the active population (leaves and re-entrees). For some parts of the population, as for instance women, ethnic minorities, specific social classes etc. this implies the risk of loosing social status in the labour market. Education and training policies are tools to reduce this social risk. Higher education systems should developed lifelong learning programmes and structures, which do not response exclusively to the short terms needs of the labour market, but provides also tools and instruments for mitigate social risks and to support policies of social-upwards mobility.

The revision of the European and national discourse of the role and function of higher education in the European knowledge society shows that the issue of social equity in the education system doesn’t stand in the foreground of the policies. In coherence with the general outline of the Lisbon strategy and the new European social model, higher education forms part of the arsenal of tools to adapt the work forces to the requirements of the labour market in the knowledge economy. Emphasis is put on the employability as the guide for the adaptation of the higher education curricula. And the objective is established that the higher education institution will play an active role in the lifelong learning policies. The paradigm shift from passive protection
policies to activation policies and its application in the education and training system confirms the yet established principle of meritocracy. The individuals are considered as the owner of their professional destination offering them tools to the constantly up-dating of their professional competences.

Despite of this awareness for lifelong learning, the insights of the national policies showed an underdevelopment of such policies in the national higher education systems under scrutiny. The reforms undertaken in the last decade – actually focused on the adaptation to the Bologna criteria – is mainly focused on the initial higher education through the redesign of the curricula. The main road is applying the competence approach via European credit system with the objective to bring the curricula nearer to the constantly changing environment.

The principal orientation of this policy approach is the increment of horizontal and territorial mobility. Less important seems the mitigation of social risk related to specific social collectives defined on the line of gender, age, ethnicity, social class etc.

The revision of the higher education policies in the six European countries under scrutiny and at the EU-level indicates that they are focused primarily on adaptive function of higher education for economy, and less on opportunities for social-economic change induced in a pro-active way. This one-sidedness approach is coherent with the simplified concept of knowledge economy/society handled on the policy level. Taking serious advanced social scientist approaches of knowledge society or learning society and conceiving (higher) education as a driving force of modernisation, requires the development of pro-active higher education policies.
3. A new social function of HE

The new European Social Model:
Higher Education mitigating
new social risks

Insights for national debates
on higher education
Across the EU it is broadly acknowledged that knowledge as one of the most relevant (and accessible) production factors can explain long-term growth as well as the availability of highly educated workforces as a critical drive for country economic development. Different evidences indicate that a high performing HE would facilitate and shorten the school-to-work-transition,\textsuperscript{78} which, in turn, would have positive effects on social inclusion.\textsuperscript{79} However, the recent changes in the labour market have had also negative social effects, mainly deriving from "two-tier labour markets [...] divided into those working under precarious temporary work contracts and those benefiting from permanent contracts" [Almunia, 2005]. In such a context, the new social risks have been summarized by Taylor-Gooby [2004] as follows: "The chief new social risks emerging in the sphere of paid work are three: problems in entering the labour market, problems in maintaining stable, secure, and reasonably well-paid employment and associated social security entitlements and problems in gaining adequate training in a more flexible labour market".

The concept of new social risks emerged in the discussion about the reform welfare state at the beginning of the 2000’s to reflect the changes in the social reality of the European states, to which the social policies must have responded. Taylor-Gooby, and others like Larsen and Bonoli has coined the term of “new social risks”. It makes reference to the phenomena of the aging society, the increasing corporation of women in the labour market and the increasing uncertainties in labour market, which distinguished the industrial society from the post-industrial society.

However still in the 1970’s the industrial sociologist Altmann & Böhle [1975] are mention new social risks, making reference to the problems of the systems of social protection to conceive adequately the social risks. Until then, the systems of social protection defined social risks overall in relation to the labour markets. Social Risks are defined as these risks that reduce the possibility of a person to be employed as for instance sickness, accidents, invalidity, age, unemployment. In consequence, the traditional systems of social protection are mainly focused on the maintenance of the capacity to be employed (health and accident protection) to restore this capacity (rehabilitation) and to compensate financially the incapacity to be employed. The impoverishment of the individual labour and work situation hasn’t been recognized as social risks in spite of the fact that these developments discharged, in many cases, into the classical

\textsuperscript{78} As Smith [2002: 10] writes “in general the only employment categories that are rising across OECD economies are those for people with higher education”. Only 39% of women without a high-school or university qualification are in paid employment, compared to 61 % of those with a high-school diploma and 79% of those with a degree” (Tiraboschi, 2006). On overall, considering the full life span, the advantage of having a degree in comparison with only having a Diploma is still of having a 10 percentual points of finding an occupation (78 and 67%).

\textsuperscript{79} Social inclusion refers to the possibility for some specific segments of the population to gain access to the opportunities offered by the society they are living in.
situation of social risks. Altmann & Böhle focused their discussion about the new social risks on the work condition, especially related to the trends to reorganize the production processes through technological innovation and the lost of qualification.

At the beginning of the 2000’s, Taylor-Gooby and his colleagues took this term to underpin that the retrenchment of the welfare state has not been the only significant change in the social policy. The change from the industrial to a post-industrial society has been accompanied by the emergence of new social risks groups “that clearly do not belong to the traditional clientele of the post-war welfare state and yet are experiencing welfare losses.” [Bonoli 2004: 2] This phenomenon has been caused by the pronounced earning inequality, but also by the increasing labour market instability. The risk of poverty affects now more social collectives then in the post-war period. Also the changes in the demographic structure (aging) as well as the changing family structures (two-earner couples or mono-parental families) are accompanied by “new problems and dilemmas in terms of reconciling work and family life” [Bonoli 2004: 2].

The impact of these new social risks is different between countries, but they are observable in most countries. That means, that the welfare state has the challenge to be adapted in a period of retrenchment to the needs of social protection emerging in the knowledge society. Bonoli defined the new social risks “as situations in which individuals experience welfare losses and which have arisen as a result of the socio-economic transformations that have brought post-industrial societies into existence: above all tertiарisation of employment and the massive entry of women into the labour force” [Bonoli 2004: 4]. He mentioned the following social risks:

- Reconciling work and family life
- Single parenthood
- Having a frail relative
- Possessing low or obsolete skills
- Insufficient social security coverage.

Parallel other social scientist elaborated the concept of the transitional labour market focusing on the substantial changes in the labour markets and the increasing uncertainty. The traditional labour market has been characterized by the full-employment of masculine employees, who works probably through his whole work life for the same enterprise. His income rose steadily with age. In the case of short periods of joblessness, these would be covered by the unemployment insurance [see Schmid 2006]. The family income depends generally on the masculine breadwinner. From certain age own, the men retired from the labour market and received a pension. In absence of developed schemes of continuous training, the type of school education and initial vocational training received determines highly the position, which the breadwinner will occupy in the labour market during his work-life.
The considerable transformation of the labour markets in the last decades has incremented their structural complexity. The economic structure has changed by the increasing weight of the service sector in general. The model of the male breadwinner has eroded by the increasing quote of female employees. There is no full-employment and stable employment in one enterprise or in one economic branch isn’t even more guaranteed.

The labour biography of the workers is even more characterised by the transition from one work place to another, but also from employment to unemployment and employment again and from one employment status to another (employee, employer, self-employment and false self-employment). In this unstable work biography, the education level and the initial vocational training are still important. The labour market is also characterised by a displacement of the unskilled and low-skilled workers by high skilled workers. High skilled workers have a higher chance to stay in the labour market. High skilled workers show a significant higher employment rate and a significant lower unemployment rate. The employment in general has become more instable through the increasing use of temporary contracts, part-time work and self-employment, including false self-employment. The increased uncertainty of the labour market is accompanied by the diversification of the instruments used to protect the employees’ against this risk. These instruments are even more oriented to the re-insertion of the unemployed workers adapting their qualification to the labour market needs.

These both approaches –the approaches of new social risk and transitional labour market - describe the challenges of the European welfare regimes in the transition from the industrial society to the knowledge society.
3.1. The “New European Social Model” as a policy instrument

On the background of the social, economic and cultural changes within the European society producing new uncertainties and risks in the working life and the day-to-day life, the EU member states are obliged to adapt the welfare regimes to the changing environment. The EU developed guiding principles for the member states to reform their welfare regimes. Under the principle of the open method of coordination, these principles are of flexible use in the member states.

The main document fixing the guidelines of the reform strategies has been the Lisbon declaration of the year 2000, which in 2005 has been revised. The European Council stated the need to advance to a New European Social Model to adapt the national welfare states to the requirements of the globalised knowledge society. Within this model, education and more especially higher education plays an important role to convert the EU to the most competitive knowledge economy and to resolve the problems of the new and old social risks.
3.1.1. The historical trajectory of the concept

Crucial for the understanding of the Lisbon strategy and of the concept of lifelong learning is the so-called “European Social Model”, which is the vision to guide the social policy in the European Union. This vision doesn’t response to the empirical reality in the European Union in the sense of coherent Europe-wide applied model, but expressed the common shared basic principles of the national state social model. The “New European Social Model” reflects a paradigmatic change in the social agenda. Meanwhile in the post war period until the 1980, the different national social models are focused on passive social protection; the new “European Social Model” promotes the active welfare state considering social policy as an economic factor. This paradigmatic change is related to the perceived social-economic transformation of the world society to a globalised knowledge based society.

Since the Rome Treatment (1957], the European Union has been characterised by the institutional separation between economic and social politics. Meanwhile the European Institutions have been responsible for the economic integration, the social policies have been reserved as an area exclusively for the member states, which were defining and designing their own national social policies. This is the reason, why the European integration has been marked until the 1990’s, more in concrete until the Treatment of Maastricht by the „political de-coupling of economic integration and social protection issues“ [Scharf 2002]. This separation has become questioned under the presidency of the European Commission of J. Delors, when a debate about the “European Social Model” has been started. Functional, this debate was issued under the objective to reinforce the process of European integration. At this stage, it was discussed if the mechanism of European regulation must be extended to the area of social policies [see Majone 1994 and 1996]. But in the following years, the debate has become another focus, which has its mayor expression in the political agenda approved by the European Council in Lisbon in 2000. One of the declared priorities of the agenda was the “modernising the European social model, investing in people and combating social exclusion” aimed to “to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion.” Overall in the areas of the economic policies, the employment policies and social security the proposed “New European Model” includes liberal inspired approaches oriented to flexibilize the labour market, to improve the employability and to rearrange the system of social protection with the objective to achieve a mayor compability of the EU-society with the globalized socio-economic process.

As the vision to guide these reform processes, the “New European Social Model” is based on the principle of activation. The reference point of this model is the labour market and is oriented to facilitate the entrée, re-entree and maintenance in the labour market by capacitating the
unemployed and employed persons. The new social model is based on the interrelated triangle of economic, educational and social politics like it is designed in the Lisbon strategy. And the objective of the educational system within this framework is to promote employability (by lifelong learning and internationalisation of qualifications), considering that the creation of employment is the best social policy strategy to contribute to social inclusion and equal opportunities. This implies a closer connection between the educational system and society and economy and a stronger orientation of educational policies to the goals of equipping persons to enter and remain active in the employment system and grasp and exploit their social opportunities. This implies also the trend to the activation policies in this model and to increment the individual responsibility for their social life course. Education and Training supports the shift to a digital, knowledge-based economy, which will be, so the statement of the Lisbon Council, a powerful engine for growth, competitiveness and jobs. This implies a more flexible labour market and a higher mobility of the European citizens promoting at the same time better and high qualified jobs.80

Education forms part of the traditional arsenal of policies to achieve social equality in the European Societies. Education has been perceived in the European post-war society as an instrument for social promotion. A result of this general policy has been the increase of the qualification level of the European population. The intention was to offer by educational policies mayor opportunities in work and social life. In the industrial society with standardised and stable work relations, the educational strategies were oriented to the initial educational and training. The shift to the knowledge based society changed this orientation. The work relations became more flexible and more insure. Under these new conditions, the education takes a new role. At the societal level, education is conceived even more as a crucial factor for the economic development of the European society. At the individual level, education is conceived as a factor to minimize the risk of social exclusion and to maximize the possibility of social inclusion. And taking in consideration that also knowledge is more flexible in the knowledge society, that means its degree of innovation is higher, the focus of the educational policies switch to the further education and training (lifelong learning).

The transformation of the labour markets as the result of social processes, but also of political reform process (flexibilisation) with the intention to accommodate them to the requirements of the knowledge-based economy implies not only new opportunities but also new social risks for the European Citizens. In the knowledge-based society, social exclusion is not even more primordially related to the economic capital but also to the human and social capital. So a European social model which will attain the objective of social equality in the knowledge society.

80 The more flexible labour market is, in so far, the result of the transformation of the global economic structure as well as of the political decision to deregulate the economic structure and the labour market.
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society, must still protect against the loss of economic capital (in form of wage), but it must be also protect against the loss of human and social capital, that means it must provide possibilities for accommodating and constant updating of the human and social capital.

3.1.2. The role of education and training in the new European social model

Based on the described political context, we can now evaluate the importance and the contextualisation of the education and training for the European policies. In the Lisbon declaration [2000], the Council has highlighted that the Education and Training Systems “need to adapt both to the demands of the knowledge society and to the need for an improved level and quality of employment.” (Lisbon declaration) Education and Training is tightly linked to the four declared priorities

- Improving employability and reducing skills gaps;
- Giving higher priority to lifelong learning as a basic component of the European social model;
- Increasing employment in services, including personal services;
- Furthering all aspects of equal opportunities.

The Lisbon declaration is the highest expression of the above-mentioned strategy to promote a paradigm change in the European social model. The objective is neither more to protect the individuals against situations of individual crisis, but it is oriented to the capability of the persons, which are in conditions to work, to be active in the labour market. The social protection against unemployment will be temporarily limited and will be accompanied with measures of (continuous) training as a support to facilitate the re-entree in the labour market. The application of the principle of activation implies that public institutions reduce their responsibility while people are considered more responsible for their own destination. This kind of employment policy is oriented to improve the employability that means be oriented to capacitate people to work for themselves and for the whole society. And in this context and under this objective, education and training – not only initial education and training but also continuous training – becomes even more important.

In the declaration from Stockholm and Barcelona, but overall in the document “Education and Training 2010” [2004] the European Education and Training strategies was concretised aimed to achieve the corresponding objectives of the Lisbon declaration. In the Stockholm declaration [2001], the European Council related Education and training not only to the economic objectives of economic growth, employment and social cohesion but also to the promotions of the “humanist values shared by our society” and continues immediately that the general aims
are individual development, development of the society (democracy, social equality and cultural diversity) and economic development. At its end, the declaration underpins again the need to adapt the education and training system to the requirements of the knowledge society: “The future of the Union requires a solid contribution from the world of education and training. It requires that education and training systems can be adapted and developed so as to deliver the skills and competencies everyone needs in the knowledge society; to make lifelong learning attractive and rewarding; and to reach out to everyone in society, however far from education and training they may consider themselves, with ways of developing their skills and making the best use of them” [Stockholm declaration 2001]


- The transformation of the European society to a knowledge society implies that the knowledge of the citizens cannot be any longer static. The Education and Training systems must be adapted to the dynamic change of the needed knowledge and must developed for this reason strategies of lifelong learning.

- The demographic trend towards ageing of the European population requires to encourage people to higher educational and training efforts. This refers to the traditional paths of Education and Training, but also “work-based learning”. To achieve these objectives, special efforts are need from the education and training system respect on information, guidance and continuing education and training of the people, especially the teachers and trainers.

- Education and Training are considered as means to achieve equal opportunities and social integration. That means to have equitable access to prosperity, democratic decision-making and individual socio-cultural development throughout their live course.

On this background more concrete aims have been formulated:

- The first objective is increasing the quality and effectiveness of education and training systems in the European Union as an essential on the way to accomplishing the Lisbon objectives.

81 The declaration proclaimed the following fundamental objectives:

- “the development of the individual, who can thus realise his or her full potential and live a good life;
- the development of society, in particular by fostering democracy, reducing the disparities and inequities among individuals and groups and promoting cultural diversity,
- the development of the economy, by ensuring that the skills of the labour force correspond to the economic and technological evolution.” [European Council 2001a: 4]

82 “Lifelong learning in the context of employability will in many areas be a prerequisite to stay attractive to the labour market.” [European Council 2001a: 5]
The second objective is facilitating the access of all to education and training systems. The strategy towards lifelong learning implies to make education and training systems attractive for anybody and to overcome the traditional barriers between the various parts of formal education and training and non-formal and informal learning.

The third objective is the opening up education and training systems to the wider world that means to other parts of the society and other geographical parts of the world to increase geographical and professional mobility, to be able to communicate across national boundaries, to prepare the citizen for the international and multicultural society and to increment the attractiveness of the European Education and Training System in the world.

Following the indication of the Lisbon strategy to create a European labour market, the Barcelona declaration [2002] considers a priority the action policies towards full employment and for more and better jobs. Within this priority, two subtasks has been established, one is titled “a reinforced employment strategy” [Barcelona declaration 2002: 9] and the other “promoting skills and mobility in the European Union. Overall this second one addressed the objective “to remove the barriers within the European labour markets” [Barcelona declaration 2002: 12] and established the following objectives:

- “In accordance with the Action Plan adopted at Nice, putting into place the legal conditions required to ensure genuine mobility for all those involved in education, research and innovation;
- Lowering regulatory and administrative barriers to professional recognition as well as other barriers resulting from failure to recognise formal qualifications and non-formal learning taking into account the paragraph on education below;
- Ensuring that all citizens, and in particular groups such as unemployed women, are well equipped with basic qualifications, especially those linked with ICTs;
- Increasing where appropriate the transferability of social security rights, including pensions, across the European Union. In this context, the European Council asks for work to be pursued as a matter of urgency, on the basis of the parameters agreed at the Laeken European Council, on the reform of Regulation (EEC) No 1408/71 on the coordination of social security systems, so that the new Regulation can be adopted before the end of 2003” [Barcelona declaration 2002: 12f].

The Barcelona declaration [2002] proposed establishing a close link between the lifelong learning strategies and the European Employment Strategy. It proposed also concrete action in the field of education and training under the header “a competitive economy based on knowledge” highlighting the basic principles to inspire this programme: “improved quality,
facilitation of universal access, and opening-up to the wider world”. The following actions are proposed:

- To introduce instruments to ensure the transparency of diplomas and qualifications (ECTS, diploma and certificate supplements, European CV) and closer cooperation with regard to university degrees in the context of the Sorbonne-Bologna-Prague process prior to the Berlin meeting in 2003; similar action should be promoted in the area of vocational training;

- To improve the mastery of basic skills, in particular by teaching at least two foreign languages from a very early age: establishment of a linguistic competence indicator in 2003; development of digital literacy: generalisation of an Internet and computer user’s certificate for secondary school pupils;

- The European Council calls on the Commission to undertake a feasibility study to identify options for helping secondary schools to establish or enhance an internet twinning link with a partner school elsewhere in Europe, and report back to the Seville European Council in June;

- To promote the European dimension in education and its integration into pupils’ basic skills by 2004.

But it is the report “Education & Training 2010” of the year 2004 which guided the actual education and training policies of the EU highlighting again the relevance of education and training for the socio-economic development of the EU and the transition of the EU towards to a knowledge economy. Following the Lisbon declaration it related education and training to competitiveness, sustainable growth, and employment as precondition for the achievement of the general social, environmental and cultural goals. The former declaration of the Council still mentioned other goals as for example social integration, active citizenship and a satisfactory work and family life as such as important then the economic goals, this document put the socio-economic goals forwards and the others backward. This reflects the underlying intention to functionalize education and training for economic proposals. This is confirmed by the declaration to achieve increasing synergy and complementary effects “between education and other policy areas, such as employment, research and innovation, and macroeconomic policy” [Education & Training 2010 2004: 4]. And in accordance to the overloaded objectives of the Lisbon strategy, here again the objective is formulated to make the European Education & Training system the worldwide quality reference by 2010.

The transformation of the EU to a knowledge-based economy depends on the efficient and effective investment in human resources. Three main objectives are established:

- The increment of public and private investment in education and training;
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- The promotion of lifelong learning; and
- The creation of a European Area of Education and Training, in which the diplomas and certification obtained will be recognised everywhere in the EU.

The achievement of these goals requires fundamental reforms of the education and training systems. New demands are placed on education and training by the priority to promote “employability and mobility within an open European labour market, as a complement to the single market for goods and services”, which requires “to build stronger relationships between the education and training world and employers so that each has a better understanding of the needs of the other”. Only then it was underpinned that the education and training should give -at the same time – significant answers to new needs generated by the knowledge based society “in terms of social cohesion, active citizenship and personal fulfilment” [Education & Training 2010 2004: 8].

Starting from these goals, the document proposed concrete measures:

- The implementation of measures to make the teacher/trainer profession more attractive starting from the assumption that “the success of the reforms undertaken hinges directly on the motivation and the quality of education and training staff.”

- To promote lifelong learning strategies by equipping all citizens with the key competences they need. The improvement of the acquirement of a minimum set of competences which “could include communication in the mother tongue and in foreign languages, mathematical literacy and basic competences in science and technology, ICT skills, learning-to-learn skills, interpersonal and civic competences, entrepreneurship and cultural awareness.”

- The creation of open, attractive and accessible to everyone learning environments by the development of flexible and open qualifications and competences frameworks and the strengthening of the role, quality and co-ordination of information and guidance services.

- Linking the education and training policies to social inclusion policies and paying special attention to “disadvantaged groups, such as people with low levels of literacy or qualifications, older workers, groups living in disadvantaged areas or outlying regions, and people with learning difficulties or with disabilities” [Education & Training 2010 2004: 27].

- “The development of common European references and principles can usefully support national policies” [Education & Training 2010 2004: 27] based on the principles of the Open Method of coordination and the mutual trust building.

- The establishment of a European Education and Training area by the creation of a single European framework for transparency of qualifications and competences in closer
coordination with the Bologna Process, which includes the creation of an European Qualification Framework; the mutual recognition of qualifications and competences; the strengthens of the European issue at all education and training levels.

By the presented documents a European framework for the concrete policies in the field education and training as been established and concrete goals has been defined, which then has been refined in the Copenhagen declaration for the vocational education and training area. The presentation of the goals and strategies has evidenced the strong relation to the European social policies and the economic policies, which has been described before as the magic triangle of the “New European Social Model”. Through this triangle “education and training” has experimented a revaluation in the sense that it has become one of the strategic priorities of the EU, but - in certain way - it has also lost autonomy so that it must take more in account the economic and social objectives in the design of the proper education and training policies.

3.1.3. Lifelong learning policy

The former analysis of the European Policies towards a New European Social Model and the strategy fixed by the European Council in the Lisbon declaration shows that lifelong learning is an essential part of EU-strategy to support the transformation of the EU-society. Education and Training in general is perceived as the main road to prepare the European Citizens for a high competitive knowledge society.

Lifelong learning is defined as “all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within a personal, civic, social and/or employment-related perspective” [Lisbon declaration 2000]. Lifelong learning includes therefore all possible stages of learning from pre-school to post-retirement, at all possible forms from formal learning to non-formal and informal learning. It established a relation between the acquirement of knowledge, skills and competence and the social and economic performance of the society. It includes also a switch from the teaching paradigm to the learning paradigm.

This strategy is also in accordance to the promoted New European Social Model, where the individual is declared highly responsible for his own professional destination under the condition that the “learning opportunities should be available to all citizens on an ongoing basis. In practice this should mean that each citizen has an individual learning pathway, suitable to his needs and interests at all stages of his live. The content of learning, the way learning is accessed, and where it takes place may vary depending on the learner and their learning requirements.”

The Commission declared as an objective establishing a European area of lifelong learning “the aims of which are both to empower citizens to move freely between learning settings, jobs,
regions and countries, making the most of their knowledge and competences, and to meet the goals and ambitions of the European Union and the candidate countries to be more prosperous, inclusive, tolerant and democratic” [European Commission 2001: 3]. The knowledge society and the ongoing social-economic changes present new social opportunities but also new social risks for the European citizens. Taking advantage of these opportunities and also to avoid as much as possible the new social risks is reliant on the ongoing acquisition of knowledge and competences and to invest in the development of Human Resources. In this social, political and economic context, lifelong learning is seen as one of main roads to adapt the European society to meet these new challenges. Lifelong learning is an essential pillar of the new European social Model83, in which employability and adaptability are considered the key to maintain Europe’s commitment to becoming the most competitive and dynamic knowledge based society in the world.84 But the lifelong learning goes beyond the economic goals and promotes a more inclusive, tolerant and democratic citizenship to build up a better society. The European Union takes for that at the beginning of the decade of the 2000 the decision to promote a new approach to education and training policies based on the framework of lifelong learning. This implies a shift from the traditional focus on institutional arrangement to provision of learning opportunities and its recognition as first step to a better society.

The lifelong learning strategy is closely linked to other parallel strategies like the European Employment Strategy, the European Social Strategy, Skills and Mobility Action Plan and especially the policy towards the European research area. “While each of these strands has its own specificity and objectives, taken together they contribute to the realisation of a European area of lifelong learning” [European Commission 2001: 8].

The lifelong learning strategy is based on 6 essentials as:

• **Partnership working** “reflects the shared benefits of, and responsibility for, lifelong learning. Joint/coordinated action is often also the most responsive to different circumstances and the most effective, building on diverse expertise, strengths and resources” [European Commission 2001:11]

• **Creating a learning culture** requires direct measures to motivate (potential) learners and raise overall participation levels by making learning more desirable in terms of active citizenship, personal fulfilment and/or employability.

83  “This is why the Lisbon European Council confirmed lifelong learning as a basic component of the European social model” [European Commission 2001:6]

84  “Lifelong learning, therefore, has a key role to play in developing a coordinated strategy for employment and particularly for promoting a skilled, trained and adaptable workforce. This means removing the barriers that prevent people from entering the labour market and limit progression within it. Tackling inequality and social exclusion is part of this.” [European Commission 2001:7]
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• *Striving for excellence* implies to adapt strategies “to maximise the quality of the learning experience itself and also of the policy/implementation processes and services associated with learning” [European Commission 2001:14]

• *Insight into the demand for learning*, that means that “an understanding of the needs for learning amongst citizens, communities, wider society and the labour market should be the basis of any strategy for lifelong learning” [European Commission 2001:12].

• *Facilitating access to learning opportunities* that means opening the different learning system for the access of new learner groups.

• *Adequate resourcing* that means the fundamental changes towards the knowledge based economy calls for higher, but also effective and efficient investment.

The lifelong learning strategy as each other educational strategy is implemented under the directive of the Open Method of Coordination that means the EU can not obligate the Member States to adopt certain measures. They fixed only medium-term objectives, which then will be checked on conference with the Member States if they have been achieved or not and there will be a discussion about problems and solutions. But in any case the EU has sanction mechanism respect to the Member States.

At this stage of the development, the general objective of higher mobility hasn’t been expressively addressed in spite of that it can be considered that it is included in the objective “facilitating access to learning opportunities”. But mobility is expressively mentioned in the area of higher education. To promote the geographical mobility of the students the Erasmus programme has been put in action in 1997.

The promotion of learners’ mobility and the promotion of the Europe wide recognition of professional qualification acquired in formal and non-formal learning processes - as a precondition for the creation of a real European labour market – has declared firstly as a priority of the EU-policies based on the basic principles to improved quality, to facilitate universal access, and to open-up the European Education to the wider world. The European Council concretised also specific actions in these fields as the development of instruments to ensure the transparency of diplomas and qualifications (ECTS, diploma and certificate supplements, European CV) taken the Sorbonne-Bologna process as the reference of the whole education system to promote the European dimension in education.

3.1.4. **Restructuring the higher education**

Talking about higher education in the New European social model, it is necessary to mention the Bologna process as the cornerstone of the actual restructuration process of the European higher education systems. The Bologna-process isn’t a process initiated by the EU. It was
initiated by four EU-governments (France, Germany, Italy and the United Kingdom) at the 
Sorbonne University in Paris in the year 1998. The process integrates also states from outside of 
the EU participate. However it has become the cornerstone of the strategy to create a European 
area for higher education.

In the Sorbonne Joint Declaration [1998], Ministers in charge for higher education from France, 
Germany, Italy and the United Kingdom declared the intention to create a European Area of 
higher learning carriers or European Area of higher education to “strengthen and build upon the 
intellectual, cultural, social and technical dimensions of our continent”. They proposed to 
harmonize the national higher education systems creating a common framework of two main 
cycles – undergraduate and graduate – allowing the mutual recognition of the higher education 
certificates. They propose also the use of credits such as the ECTS-scheme used in the Erasmus 
programme allowing so an international mobility of the students as well as a higher flexibility in 
the access to higher education provisions aiming that the system allows the access to the 
academic world at any time of the professional trajectory.

One year later the representatives of 29 European countries joined to the extended version of the 
document in Bologna. The new document called Bologna Declaration [1999] aims to create a 
European higher education space to enhance the employability and mobility of citizens and to 
increase the international competitiveness of European higher education. They emphasised that 
the creation of the European area of higher education is the key element to develop the 
European cultural dimension as well as for the promotion of the students’ mobility and 
employment. The objective is also to open the higher education system for learner from outside 
of the higher education contexts. In so far, it will contribute to the European development in 
general. The declaration confirms the independence and autonomy of the higher education and 
research system insisting in the need to adapt the system to the demands and advances of the 
society. However, the Bologna declaration introduced a new objective for the creation of a 
European area of higher education: within the international competition, the attractiveness of the 
European higher education systems must be improved. This general objective should be 
achieved by 6 concrete measures:

- Adoption of a system of easily readable and comparable degrees
- Adoption of a system essentially based on two main cycles, undergraduate and graduate.
- Establishment of a system of credits
- Promotion of mobility by overcoming obstacles to the effective exercise of free movement
- Promotion of European co-operation in quality assurance
- Promotion of the necessary European dimensions in higher education in the development of 
  the higher education Systems through International cooperation.
The goals laid down in the declaration are rather heterogenous. Two of them, “increasing mobility” and “promoting the European dimension of the higher education” have a strategic character, while the others are more technical-structural oriented. The document emphasises, although in a very indirect way, the connection between the two types of goals, but on the other hand the way of coordination between them remains open. In other words the Declaration stresses the autonomy of the partner countries in how and when they implement the reforms related to the Bologna process. In addition the Declaration concentrates on the structural dimension of the restructuring and does not deal with the content of changes.

Three years later, in Prague the Ministers of education of 32 European countries confirmed in 2001 these 6 concrete measures to achieve the EAHE, but introducing some interesting details [Prague Communiqué 2001]:

- Under the issue of adoption of a system of easily readable and comparable degrees, the Prague communiqué extended this objective to “the academic and professional recognition of course units, degrees and other awards.”
- The establishment of a system of credits is based on transferable and accumulable functions to “facilitate students’ access to the European labour market”.
- Promotion of mobility by overcoming obstacles to the effective exercise of free movement mentioning the social dimension of such mobility
- The promotion of European co-operation in quality assurance is considered as the cornerstone to achieve a high quality higher education. Quality assurance is basic to achieve mutual trust between the national system, which is the basic for the mutual recognition of credits and degree.
- Under the issue of promotion of the European dimensions in higher education, the communiqué encourage the higher education sector to develop joint modules, courses and degree curricula [see Prague Communiqué 2001].
Additionally, the communiqué insist in lifelong learning as a crucial element for the EAHE and in the participation of higher education institutions and students in the process. It relates the Bologna process also to the development of a European Qualification Framework and mechanism of quality assurance and accreditation and certification aimed to increment the attractiveness of the EAHE.

Two years later, in Berlin, the Ministries of Education stated, for the first time, the social dimension of the Bologna process [see Berlin communiqué 2003]. The increasing competitiveness of the higher education systems “must be balanced with the objective of improving the social characteristics of the European Higher Education Area, aiming at strengthening social cohesion and reducing social and gender inequalities both at national and
at European level” [see Berlin communiqué 2003: 1]. They confirmed higher education as a public good under public responsibility as well as the prevalence of academic values in the Bologna Process. However in a next step, the Bologna process is expressively linked to the objective of the Lisbon process to create the most competitive and dynamic knowledge-based economy in the world. Another novelty of the Berlin communiqué is the confirmation of the linkage between higher education and research and the objective to achieve synergies between the EAHE and the European Research Area. This linkage conduced also to the incorporation of the doctoral level in the Bologna process switching form a two-cycle system to a three-cycle system.

In contrast to the further communiqués and declarations, the Berlin communiqué established a time prevision for the different measures and concretised them. For the adoption of the two-cycle system, the communiqué encouraged the member states “to describe qualifications in terms of workload, level, learning outcomes, competences and profile” [see Berlin communiqué 2003: 4] and to define a European Framework of higher qualification based on learning outcomes. This framework must encompass the wide range of flexible learning paths, opportunities and techniques and to make appropriate use of the ECTS credits to open the learning pathways for lifelong learning. Lifelong learning is confirmed as an integral part of the Bologna process and of the future higher education systems enhancing “the possibilities for lifelong learning at higher education level including the recognition of prior learning” [see Berlin communiqué 2003: 6].

In 2005, the meeting of the Ministers of Education in Bergen confirmed the strategy to define the three cycles through “generic descriptors for each cycle based on learning outcomes and competences, and credit ranges in the first and second cycles” [Bergen communiqué 2005: 2]. They confirmed also the aimed complementarity between higher education qualification and the national qualification frameworks and at least the European qualification framework.

Following the outlines of the Berlin communiqué, the Bergen communiqué strengthened the social dimension of the Bologna process renewing the commitment “to making quality higher education equally accessible to all, and stress the need for appropriate conditions for students so that they can complete their studies without obstacles related to their social and economic background” [Bergen communiqué 2005: 4]. This includes financial and economic measures to help students especially socially disadvantaged groups, as well as guidance and counselling services. The Bergen Communiqué also contains postulates concerning the importance of intercultural or supracultural respect and understanding, upholding the principle of public responsibility for higher education in the context of complex modern societies of Europe and preparing students for active citizenship.
In Bergen a background report entitled “The Framework for Qualifications of European Higher Education Area” was presented, which are the basic for the qualification framework adopted at the same conference. This background report contains the following general directives to reinforce the European dimension of the higher education:

- the European and national structures of graduate qualifications should serve to strengthen the social cohesion of Europe, emphasizing the social dimension of graduate qualifications,

- the system of higher education should fulfil four essential aims:
  1. prepare for the labour market,
  2. prepare for active citizenship,
  3. foster personal development,
  4. teaching an individual to supplement his or her education by equipping him or her with a broad, advanced knowledge base;

- the descriptors of learning outcomes should incorporate the following three essential elements:
  1. knowing and understanding,
  2. knowing how to act,
  3. knowing how to be[^85].

This social function of the Bologna process is confirmed by the London communiqué [2007] of the year 2007 establishing priority to contribute to the “social cohesion, reducing inequalities and raising the level of knowledge, skills and competences in society” [London communiqué 2007: 5]. One main objective of the Bologna process is in so far the creation of “flexible learning pathways into and within higher education, and to widen participation at all levels on the basis of equal opportunity” [London communiqué 2007: 5]. To strengthen the social dimension, the London communiqué established as a priority to report on “national strategies and policies for the social dimension, including action plans and measures to evaluate their effectiveness” [London communiqué 2007: 6].

The Ministers of Education stressed again the need to make “curricula reform leading to qualifications better suited both to the needs of the labour market and to further study” [London communiqué 2007: 2]. For this reason, the ministers insisted in the proper implementation of the ECTS and the description of the curricula in terms of learning outcomes and workloads.

Besides or perhaps within the social dimension, the issue of employability is underpinned. To

[^85]: This element postulates transmission of values being integral elements of the way of perceiving and living with others and in a social environment. It can be understood as a set of social attitudes, also defined as an area of social and ethical competencies, being equally important as the scope and character of the professional competencies.
improve the employability in the three cycles as well as in the lifelong learning, it is proposed to strengthen the involvement of all stakeholders in the corresponding reforms processes. The communiqué proposed to establish partnerships with stakeholders and cooperation with employers in the reform process of the curriculum based on learning outcomes. The ministers of education compromise their governments also to work “to ensure that employment and career structures within the public service are fully compatible with the new degree system” [London communiqué 2007: 6].

Revising the communiqués of the Ministers of education in turn around the Bologna process, we can observe that the process has gone step by step far beyond the objectives established in the Sorbonne declaration:

- to harmonize the national higher education systems creating a common framework of two main cycles – undergraduate and graduate – allowing the mutual recognition of the higher education certificates.

In the following years, the Ministers established successively the guide for a more in depth reform of the higher education systems based on the competence and learning outcome approach. This seems the main road of the European union not to create only a European Area of Higher education but to open higher education for lifelong learning policies and widening the access to higher education provisions. The key elements for this strategy are the quality assurance to establish a trustful context for national rooted higher education in Europe, the credit system based on learning outcomes and a competence approach as well as the national and European qualification frameworks, which are developed in parallel.

Parallel to the meetings within the Bologna process, the European Commission worked on higher education policies within the strategy to define the role of the universities in the knowledge society. Universities are considered as one of the main actors to achieve the goals of the Lisbon strategy, “particularly employment and social cohesion, and to the improvement of the general level of education in Europe” [European Commission 2003b: 5]. The universities must response to new expectations generated by the transition to the knowledge economy including the increasing need for “scientific and technical education, general skills, and opportunities for lifelong learning” [European Commission 2003b: 8]. Lifelong learning provision are seen as the way to open the access to higher education to new social collectives, which are not following the traditional pathway of upper secondary education. This strategy includes the need of recognition of prior learning in formal and non-formal contexts. To adapt adequate strategies in response to these new challenges, there is an increasing pressure to count with persons from outside of the academic world in the management and governance structure of the universities introducing criteria of efficiency. Open the higher education for new social collectives implies also to diversify the offer. Offering the same course for the same social
collectives impede, so the argument, the access for other until now excluded social collectives, but also the didactical innovation and bringing nearer the higher education to the labour markets.86 Opening of higher education for new social collectives implies also to revise the mechanisms of support, which are considered in 2006 as insufficient to ensure equal access and equal opportunities of success. In so far, it is considered that the free access to higher education only doesn’t guarantee social equity.

On the other side, the universities are underfunded to affront all these challenges. Also in comparison with the competitors among the developed countries, especially the USA, the European universities count with insufficient financial resources. Until now, the main source of financing has been the public funds for research and teaching. However, still in 2003, the Commission stated as improbable that the national public funding would increase significantly in the following years in spite of the compromise acquired by the member states in the Lisbon declaration to increment the human resource investment to catch up with the USA. In 2003, the Commission proposed to discuss alternative forms of funding like private donations, selling services as research services and lifelong learning facilities and the economic use of research results, and private contribution from the students in form of tuition and enrolment fees.

The underfunding of the universities induced also to think about a more efficient use of the scare resources. In this aspect, one of the main concerns is the reduction of the dropout rate and the reduction of the study time. Another main concern is the mismatch between supply and demand of qualification. “A mismatch between the qualifications offered and those requested is thus an illustration of non-optimum use of resources”. [European Commission 2003b: 14].

The Commission advocates for structures of partnerships between enterprises and universities sharing research results and intellectual property rights providing so the universities with additional income. These partnerships could also contribute to improve the labour market orientation of the higher education and training through the internships and placements of researcher and students in business, but also improving the professional perspectives of the students.87

The design of higher education programmes should be focused on the employability and on the general support to the workforce. This implies not only structural reforms encouraged in the Bologna process, but also innovation in the curricula design, teaching methods and training/retraining programmes combining general employment skills with the more specific skills.

86 European Commission [2006]
87 European Commission [2006]
However it is worth to notice in this place the high level of generality of directives and recommendations formulated in the documents relating to Bologna Process and Lisbon Strategy. It results probably from two reasons. Firstly, these documents are of ideological character; secondly – they have been elaborated under irresistible pressure of an over-national political correctness. Obviously the object of such a correctness is to obtain, on the one hand, the acceptance of key ideological postulates by all UE countries, and from the another – acceptance by political promoters of Bologna Process and Lisbon Strategy of as many as possible real solutions proposed and implemented in particular countries. However, it is conducive to superficiality of these solutions, to only apparent activities and to the representation of facts and phenomena existing within HE systems independently of paneuropean ideology as the results of Bologna Process and Lisbon Strategy implementation.

Through the Bologna process and in feedback with the Lisbon strategy the EU launched a common strategy to harmonize the European higher education system. However, the objective hasn’t been limited to the harmonisation of the different national system by the introduction of harmonised design of the educational structure in three cycles and the mutual recognition of higher education certificates. The strategy of the EU goes beyond these concrete objective focused on the creation of a European Area of Higher education. Yet the Sorbonne declaration, proposing credits as a structuring tool for the curricula design, declared higher flexibility of the higher education systems (access, learning pathways and certification) as an objective. In consequence and in coherence with the general strategy of education and learning, in the following years the EU reinforced the lifelong learning policy, but also the orientation to employability in the different strategic documents.

The strategy designed in the different EU-documents is focused on the creation of a structural context to develop such strategies. Main instruments are the quality assurance combined with development of a European Qualification framework and national qualification frameworks based on the competence and learning outcome approach, as well as the development of a European credit system for higher education based on the competence and workload approach. The European wide application of the competence and learning outcome approach, as well as the work loads to measure the credit value of an course, allows so the expectation of the UE a high flexibility of the learning pathways and the curricula design, open the access to higher education provision to new social collectives and greater nearness of the higher education to the labour market needs.

Changes in the curriculum and in methods of teaching at HEIs are directly connected to the major policy developments in the EU. The Lisbon Declaration with its emphasis upon the knowledge based economy implies that the relationship between the major economic stakeholders external to HE – public and private employers, government agencies and
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professional/vocational bodies – and HE institutions themselves, is crucial to ensuring the relevance of the curriculum, outcomes, and research activity. Hence, it is important for a shift from teaching to learning, how HEIs interact with their stakeholders, and whether they indeed put the student (and her/his future achievement in life and work) at the centre of their considerations.

Any substantial changes in the educational system always take some time to be implemented, and the effects of their implementations cannot be seen immediately and need watchful evaluation to discover the positive outcomes as well as possible drawbacks. Also it is important to note, that it is a natural side-effect that the changes are not always welcomed by the persons concerned, in particular students and teachers of universities.

A particular expression of the paradigmatic change is the credit system based on the students’ workloads integrated in an overarching strategy towards life long learning. At the European level, the LLL strategy is accompanied by a strategy to promote the homogeneity of the education and training systems within the EU. It is closely connected with the creation of a European Qualification Framework (EQF) and National Qualification Frameworks (NQF) based on the principle of learning outcomes. The European Parliament approved in 2008 a recommendation on the establishment of the European Qualifications as a framework for lifelong learning, in which an approach based on learning outcomes is recommended to define and to describe qualifications in the member states. Learning outcomes are as “statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence.” [European Parliament 2008: 4] The EQF is an 8 level system to classify qualification and to establish correspondence between qualifications acquired in different national contexts. The basis of the EQF is the definition of learning outcomes in terms of knowledge, skills and competence.

The integration of a national higher education system to the EHEA based on the principles of Bologna is considered by the political decision makers as an opportunity to reform the system and adequate it to the requirements of the knowledge society. The knowledge society implies changes in the generation of knowledge and its transmission, which requires also a new conception of the academic training, centred in the learning processes.

3.2. Higher education in the national social production systems

The “European Social Model” is a political vision to guide the European social policies assuming common shared values. However, a look on the inside of the European Union shows great differences among the member states. A wide range of social science approaches, under
which the approaches of “welfare regimes” and “varieties of capitalism” are actually the most prominent ones, covers this empirical reality. Both indicate the need to have a look on the specific social production system to be able to evaluate the social function of higher education and the higher education policies in the specific environments.

3.2.1. **Diversity of social production system in the EU**

The current debate on the viability of a specific European social or social-economic model of the knowledge-based society is related with both the issues of the structural reforms and the possibility of the convergence to a single or “new-one-best” model, identified with such labels as the “Anglo-Saxon”, “market-based”, “neo-liberal” version of the capitalism. As Amable [2005:7] noticed, “according some analysts, this convergence would be more than welcome since the most advanced knowledge-based economy is considered to be the US, and the source of its competitive and innovative advantage is usually traced back to its specific institutional structure… the institutions of the European model are supposed to be obstacles to the achievement of the Lisbon strategy”.\(^{88}\) The bad performance of Europe in comparison to the US would be due to the lack of adaptation of the European model to the demands of the contemporary capitalism. In this logic, the “indispensable reforms’ would consist in favouring the mobility of workers both within the firm and across firms and industries, to foster education and training and thus workers’ employability, to increase labour market flexibility…” [OECD, 2000].

Beside the above presented view of one part of the academic community, the widely disseminated financial newspaper ‘Financial Times’ raised the following question: “Is the ‘European model’ broken?” and after the question continued: “To many outsiders the answer is a strong yes. Increasing numbers of insiders are beginning to agree. They fear that a supposedly savage Anglo-Saxon liberalism will overwhelm the civilised European economy… All western Europeans share a commitment to what is, by global standards, generous, state-organised social welfare. This dichotomy is grossly oversimplified, and André Sapir, the Belgian economist, notes there are at least four quite distinct models of how to do so.” [Wolf, 2005 cited by Sapir 2005].

In relations with the single versus variety of the European social model, Amable [2005] and Sapir [2005b] are stressing the importance of the “right-distance” adopted, when we intend to assess the social-economic models. In the opinion of Amable [2005:15] “to a large distance,

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\(^{88}\) The well-known objectives of the Lisbon summit is well summarized in the Kok (2004) report: „to make Europe the most dynamic and competitive knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion, and respect for the environment.” [Kok-report 2004: 6]
every country belong to a general category of ‘market economies’. Looking at models at too close a distance makes it appear that each country is ‘different’ and even ‘very different’ from another country. This trite observation of course of no help to analyse the problem we are faced with. All the more that the search for differences has no end, within each country, regions or industries are “very different” from each other when one looks close enough.”

During the 1990’s several views on the economic or social-economic models did appear in the academic community. In spite differences in the characteristics of these models, all of them belonged into the category of the “dichotomy model”. One of the well-known concepts was intended by Albert [1991]. In his argument, Europe is a political entity and has its specific institutions; therefore it is more than a large free trade (note: or euro) zone. The model, which is close to this thinking, as Amable [2005:14-15] notes, is the so-called “Rhine” model of capitalism, represented in Europe by Germany/Austria and in Asia, Japan. The opposed model is the neo-American or Anglo-Saxon, which is represented by such countries as USA and within Europe, the UK. In spite to the fact, that in Albert [1991]’s view, there is no single “European” model because of the country specific institutional diversity in the EU, in many respect he supposed the superiority of the “Rhine” model to the neo-American. Beside the fact that the “Rhine” model globally better suited to the European societies, he did not shared the views according them the neo-American model will win in a free competition among the varieties of capitalism. However, he believed in the dissemination of the “Rhine” model via the political process of the EU integration.

The other emblematic work in the “dichotomy” direction is the Hall-Soskice [2001] contribution. In the core of their analysis is the “firm” based on the “relation concept”, according to that the firm or company is an actor or agent actively seeking to develop dynamic capabilities, and institutional setting within which it operates. Firms develop and mobilise relationships to solve coordination problems in the following spheres:

1. **Labour or industrial relations system** (e.g. system of both individual or collective coordination with the participation of the employers and employees’ representatives on the working and employment conditions)

2. **Corporate governance** (e.g. the patterns of ownership relations, which have decisive impacts of financing various projects within the firms)

3. **Vocational training and education** (e.g. the role of the company and sector level skill formation system, “high” skill and “low” skill equilibrium and its relations with the “high”, “low” or “no-road” of economic development etc.)

4. **Inter-firm relations** (e.g. co-operation versus competition driven relations between firms, roles of the formal versus non-formal networking among the firms)
5. **Intra-firm relations** (e.g. one of the main problems of coordination the relations between employers and employees, how to get access to the non-coded or tacit knowledge of the employees, how to share it with the management and across occupational groups etc.)

Using the briefly presented forms of co-ordinations, Hall-Soskice [2001] developed a “binary classification” of the capitalist production regimes, the *liberal market economies (LME)* and the *co-ordinated market economies (CME)*. The nature of co-ordination separates the two production systems. In a LME, the core co-ordination is based on market mechanisms and on dominant role of investment in transferable assets. In the CME, the co-ordination is carried out by non-market or strategic coordination and competed by the investment in specific assets. According the differences in the forms or forces of co-ordinations, as Amable (2005:15] writes “LME are thus characterised by short-term finance, deregulated labour markets, and emphasis on general education, and strong product market competition. CMEs are characterised by long-term finance, co-operative industrial relations, high-level of vocational training, weakened production market competition, and strong information exchanges through more or less formal professional associations favouring the establishment of common industrial standards. The differences extend to the pattern of innovation and technological change as well as industrial specialization, the so-called comparative institutional advantage.” Such dichotomy driven approaches as Albert’s [1991] and Hall-Soskice’s [2001] ones create – at least – the following problems. Firstly, classifying all countries into two - broader categories has the risk of ignoring essential country characteristics and emptying the meaning of the classification itself. Secondly, the two broad categories have rather few information on the country characteristics bringing them either into the category of LME or CME. To overcome these shortcomings of the binary classification, it is worth to present the other views, having the ambition to go beyond the dichotomy approaches.

Several attempts tried to overcome the shortcomings of the briefly outlined dichotomy views presented above, for example: Esping-Andersen [1990,] Boyer [1997], Rhodes &van Appeldorn [1997], Ebbinghaus [1999], Amable [2005], Sapir [2005a]. These authors tried to identify a variety of institutional complementarities, which generates a diversity of models of capitalism. Among the authors listed above, Amable [2005, 1997] and Sapir [2005a] approaches represent – in our view - a suitable analytical tool to better understand the relations between the performance of the higher education system and the social models. Both authors went beyond the dichotomy or binary classification and made an attempt to identify four or five versions of the European social models. In his original work on “Globalisation and the Reform of European Social Models [2005], Sapir’s main goal is to compare the performance of the “Four European Models” in terms of “efficiency” and “equity”. Firstly, we present the Sapir [2005] four models and than Amable five types of capitalism (or SSIP). Before presenting these views on the
European Social Models, we have to admit that, unfortunately, these models do not cover the New Members States (NMS), therefore in the case of Hungary and Poland we rely on less systematically elaborated analysis and assessment. There is a variety of the social models and development trajectories in the emerging post-socialist economies in Central Europe; however, only very recently we assist an effort of economists to study the institutional arrangements or specialisation and their impact on the competitiveness in these economies. [Lane 2006, Berlou-Carrincazeux, 2005].

Figure 18: The Four European Social Models: The Typology

<table>
<thead>
<tr>
<th>EQUITY</th>
<th>EFFICIENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>High</td>
<td>“Continents”</td>
</tr>
<tr>
<td></td>
<td>(AT, BE, DE, HU, FR, LU)</td>
</tr>
<tr>
<td>Low</td>
<td>“Mediterraneans”</td>
</tr>
<tr>
<td></td>
<td>(ES, GR, IT, PT, PL)</td>
</tr>
</tbody>
</table>

Source: Sapir [2005:9]

Note 1: “Bold” letters indicate the countries participating in the NESOR project. The classification of the two NMS countries based on the interview given by Sapir for the Hungarian Economic Weekly (“Heti Világgazdaság, HVG) on 29th October 2005. According to his assessment on the NMS countries, the social system of Hungary looks like a “continental”, not really efficient, e.g. the rate of employment is lower than the average of the NMS. On the other side, “solidarity” characterises the Hungarian social system – at least until the changes, which has been started in 2007. Poland, in the opinion of the Belgian economist, has “low equity” and “low efficiency” social system and belongs into the Mediterranean country cluster of the EU-15.

Note 2: A content of the four social models of the European capitalism is presented in the Annex no. 1.

In the view of the Belgian economist Sapir [2005:2] such notions of “European social model”, “Social Europe” or “European model” are rather misleading, “…. in fact, there is no such thing. Europe is home to different social models, with different features and different performances in terms of efficiency and equity. In this perspective a model is considered as efficient if it provides sufficient incentives to work and generates relatively high employment rates. Equity is the model’s capability to keep the risk of poverty relatively low. The different social models which to four broad categories illustrated by the Figure 18.

The Figure 18 has at least, two types of reading. The first one informs us on the well-known “trade-off” between efficiency and equity. From this “static” point of view, in the case of the countries classified into the “Nordic” and “Mediterranean” country cluster, have no such kind of “trade-off. As Sapir notes, “Nordics enjoys an envious position, with a social system that delivers both efficiency and equity, whereas Mediterraneans live in a social system that delivers
neither efficiency nor equity. On the other hand, Anglo-Saxon and continental countries both seem to face a trade-off between efficiency and equity. Anglo-Saxons have an efficient but inequitable social model, while continentals enjoy for more equity but far less efficiency.

The other possible reading of figure 18 may indicate the “sustainability” of the social models. Models, which cannot supply appropriate answers to the challenges of decreasing public finances, increased competition from the globalisation and the fast technological and organisational innovations are not sustainable. In the opinion of Sapir, the less efficient continental and Mediterranean models have significant sustainability constraints. For example, the share of the public debts in the GDP is visible higher in the continental (73 %) and Mediterranean (81 %) countries in comparison with both Anglo-Saxon (36 %) and Nordic (49 %) countries. The perception of globalization is more favourable in the Anglo-Saxon and Nordic countries in comparison with the continental and Mediterranean ones. According to the recent Eurobarometer survey, the share of opinion that globalization has either threat or negative effects on employment is higher in the continental (52 %) and Mediterranean (45 %) countries than in Anglo-Saxon (36 %) and Nordic (37 %) countries. However, the non-equitable social models can survive, if they are efficient. Quoting Sapir [2005:10] “… both Nordic and Anglo-Saxon models are sustainable, while continental and Mediterranean models are not and must be reformed in the direction of greater efficiency by reducing disincentives to work and to grow. On the other hand, there is no reason a priori to assume that such reforms must go hand-in-hand with changes in terms of equity. It is perfectly possible for the continental model to become more like the Nordic one, and for the Mediterranean model to become more like the Anglo-Saxon model. Nonetheless, one cannot reject the possibility that a reform towards greater efficiency may also unleash a change towards more or less equity if the previous political equilibrium were itself affected by the drive towards more efficiency.”

90 “The United Kingdom is epitomic of the Anglo-Saxon model. It has a high employment rate (72 %) and a high poverty index (18 %), France and Germany are two representative examples of the continental model, with low employment rate (63 and 65 % respectively) and a low poverty index (12 and 15 % respectively)” (Sapir, 2005:10.)

91 In relation with the impacts of globalization, it is worth to indicate the following trend which will strong influences not only on the employment and working conditions, but also on the functions and roles of the higher education system too. In a recent assessment of the impacts of globalization, Freeman, the well-known American labour economist called attention to the phenomena of the „great-doubling“. In his argument, presence of China, India and the European post-socialist countries in the global labour market doubled the size of the available workforce, from 1.46 billions to 2.93 billions. The abundant labour force supply in combination of capital shortage in these countries is creating an intensive world-wide wage-competition. Contrary to the public belief, this wage competition is not limited to the categories of the „low-wage-blue-collar workers“; For instance, Indonesia, Brazil, China and India, between 198-1990 did double the size of the university student population. China does heavily invest in natural sciences and engineering. Number Chinese PhD students in 2010 will surpass the American ones.
Amable work [2005] represents another multidimensional VoC approach. Amable in his efforts to develop typology of capitalism is focusing on the Social Systems of Innovation and Production (SSIP) and integrates into his model the role of education too. The empirical data used to build the main types of the SSIP are related to scientific and technological fields, economic structure, the educational system and the labour market. Amable [2005:19], added the “Asian Capitalism” to the Sapir’s four distinctive social models. He distinguished the following five ideal types of capitalism (See in details the Annex 2):

1. the market based-economies, liberal market economies or the Anglo-Saxon model,
2. social-democratic economies,
3. Asian capitalism,
4. Continental European capitalism,
5. South-European capitalism.

In the liberal market economies or in the Anglo-Saxon model, the intensive product and service market competition makes firms more sensible to do adverse demand or sudden changes in supplies. As Amable [2005:19] notice, “*when price adjustments cannot fully absorbs shocks, quantity adjustments matter, particularly concerning the labour force. Therefore, product market competition leads to a de facto flexibility of employment…Competition extends to the education system. A non-homogenised secondary education system makes competition among universities for attracting the best students and among students for entering the best universities more crucial.*”

The social democratic model creates flexibility not by numerical or labour market forms of it, but re-training or further training of the highly-skilled workforce plays a key role in the developing adaptability of workers. “*Protection of specific investment of employees is realised through a mix of moderate employment protection, a high level of social protection and an easy access to training thanks to active labour market policy.*” [Amable, 2005:20].

The Asian version of Capitalism, due to lack of social protection and sophisticated financial market, these are “dual economies”. Large firms play key role in providing solidarity through life-long employment, high wages etc. However, the micro- small and medium sized sector is characterised by the lack of employment stability and high-wages, too. This model of capitalism “…hinges upon the business strategies of the large corporations in collaboration with the state and a centralised financial system, which enables the development of long-term strategies.” [Amable, 2005:20.]

The so-called Continental European model has several common characteristics with the previously presented social democratic one. For example, the centralised financial system enables firms to develop long-term strategies, similarly to the social democratic countries.
However, the “…retraining of the work force is not possible to the same extent as in the social democratic model, which limits the possibilities for and ‘offensive’ flexibility of work force and fast restructuring of industries.” [Amable, 2005:20].

In the case of the Mediterranean model, the strong employment protection based on the relatively weak market competition and the lack of the short term financial constraint due to the centralised financial system. “…work force with limited skills and educational level does not allow for the implementation of a high wages and high skills industrial strategy.” [Amable, 2005:20]. In this relation, it is worth to call attention to the difficulties to make a shirt from the so-called “low-skill-equilibrium” to the “high-skill-equilibrium” strategies, which beside the above mentioned necessary skill-and competence base, additionally require motivation of the social actors and deep shift in the mental paradigms (way of thinking) of employees, employers and policy makers [see Alasoini, T. 2007].

In relation with the briefly presented types of capitalism of Sapir and Amable, we have to note that no single developed market economy is accurately characterised by any of the four or five models. These are “stylised models” or “ideal-type, as Amable rightly mention that “they may posses characteristics which makes them close to one or the other model, without being fully identifiable with the model itself” [Amable, 2005:20].

3.2.2. The role of (higher) Education in the social production systems

Education and Training has been an important subject in the social science about the modern state. Also in the approaches of the welfare regimes and varieties of capitalism, education and training has a relevant place. But it must be underpinned, that the original approach of Esping-Andersen of the welfare regimes did not include education as an aspect of social policies of the welfare states. On the contrary, Hega & Hokenmaier [2002] argued that education must be included in the measuring of welfare states because it “can reduce individual’s dependence on the vagaries of labour markets, or at least improve his or her position” Hega & Hokenmaier [2002: 7]. It also perceived as a means to improve social mobility [Janowitz 1976]. Also Allmendinger & Leibfried [2003] argued that education and social policies are interconnected and that indicators of education must be included in social reporting. They propose to take the Anglo-Saxon approach seeing education policy as part of social policy [Marshall 1964 and Heidenheimer 1981]. At the beginning of the 2000’s also Esping-Andersen [1999 and 2000]

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92 The integration of education policies in the measurement of the welfare state requires, however, some mayor modification: a) the comparison of welfare regimes must also integrate a qualitative dimension making a distinction between passive measures of social protection and measures of activation, which is also in the line of the new conception of the European social model, b) the dimension of time must be taking in consideration
took into account education as a fundamental aspect of social policies underpinning the importance of education for the modern configuration of welfare regimes in the emerging knowledge society.

In a study about the relations between spending in education and in social insurance programmes in the period from 1960-1990, Hega & Hokenmaier state for the advanced industrial societies “an association between tendencies in educational spending and the social insurance alternatives supported by welfare states” [Hega & Hokenmaier 2002: 23]. The different types of welfare regimes, particularly the three original ones, showed different strategies in respect to public education. “The education systems of liberal, conservative and social democratic welfare nations do not provide the same educational opportunities, the same gateway to socioeconomic opportunity.” [Hega & Hokenmaier 2002: 23]

To a similar conclusion came Dolenec [2005] analysing the marketization in higher education policies between 1980 and 2000. In this period, European national states have introduced market inspired funding mechanisms and increment the private funding. This is accompanied by a change in the discourse stating that in the area of higher education the objectives to disconnect opportunities from the social origins has not been achieved [Esping-Andersen 2002: 3] considering that members of the social collectives with lower socio-economic status are still highly underrepresented in higher education [Biffl & Isaac 2002]. In other words, the discourse change towards the perception that free access to higher education favoured unproportionally higher income groups, which are overrepresented in the higher education systems.

The introduction of mechanisms so that universities are competing for public funds has created “quasi market”, in which different public service providers are competing for public funding. “Most importantly, the system is a quasi-market because the price mechanism is absent – the government still covers the costs of education for the student. However, when tuition fees are introduced the system becomes less quasi and more a market. If the government determines the amount and sets up a flat fee, the market is still restrained, even though the ability to pay starts to operate.” [Dolenec 2006: 22]

At the beginning of the 1980’s, the three welfare regimes are following specific educational policies:

a) The social-democratic welfare regime extended the rational of decommodification and defamilizing also to higher education providing free access and financial support independent to the family background;

b) The liberal welfare regime extended the market mechanisms also to higher education in the funding of universities and it funds only students of the lowest income groups;

c) the family background of the recipient of education must be taken into account.
c) The conservative welfare regime also provided free access to universities based on the assumption of a family support providing only additional financial support to students [Dolenec 2006: 24].

Analysing several countries as example for the three welfare regimes, Dolenec stated a path dependency in the policies of marketisation of higher education:

a) The social-democratic welfare regimes – represented by Sweden, Norway and the Netherlands – strengthened the output measuring, the competition between institutes and delegating responsibilities to the individuals, but they protect also the higher education sector through the provision of funds for the institutes and the students.

b) The liberal welfare regimes – represented by the UK and Ireland – showed differentiated behaviour regarding to the introduction of mechanisms of quasi-markets and towards privatisation. There are similarities as neither of them has made extensive use of performance-related funding mechanisms. On the other side there are divergences as for instance Ireland abolished fees in 1996, meanwhile the UK introduced them in 1998. In the UK as in Ireland there exist mechanisms to support students through maintenance grants, but the UK changed to income-contingent loans in the 1990s. However, Dolenec has the opinion that Ireland is an exception among the analysed countries as it is later industrialised then the other countries. This could explain its rather unique development.

c) The conservative welfare regime – represented by Germany and France – shows in the case of Germany a substantial reform process. Based on a mixed of competitive and output funding, which “primarily represent attempts to make the most of the existing funding and prevent any waste in times of financial austerity.” [Dolenec 2006: 31] The conservative Länder started to apply a key market-type reform introducing fees. That can be considered as a break in the pathway as the German system has been famous until then for free access to higher education. France shows, in the opinion of Dolenec the most traditional way to reform higher education following the establishing pathway having not moved towards marketisation.

The evidences provided by this study confirms, in the opinion of Dolenec, regularities in the system and policy development in coherence to the established scheme of typologies, but it also confirms that the countries do not completely fit in to the ideal types. “In part this is due to an inherent deficiency of any ideal-type analysis: ideal types are simplified models, and as such they are always too near compared to the complexity of empirical findings. Finally, an important element that might explain why some of the analysed policies do not conform to the assumptions of the typology is that today higher education policy is increasingly formulated in the crossroads between the domains of social policy and economic policy” [Dolenec 2006: 32].
In the approach “varieties of capitalism”, education and training has played from the beginning on an important role. It focused its attention on the complementarities between social protection, skill formation and production system. The work of Estevez-Abe et al [2001] is one of the references in the discussion about the complementarities outlining the relation between the dominant types of skill development and the system of social protection. On contrary to the assumption of the welfare state approaches in the line of Esping-Andersen, the VoC-approach assumes that social protection is a mechanism to support markets “helping economic actors overcome market failures in skill formation” [Estevez-Abe et al 2001: 145]. On the other side, the availability of necessary skills constrains the margin of the enterprise to choice a product strategy. And the development of types of skills depends on the “appropriate forms and levels of social protection” [Estevez-Abe et al 2001: 146]. In this sense, they define a welfare production system as “the set of product market strategies, employee skill trajectories, and social-economic and political institutions” [Estevez-Abe et al 2001: 145]. Three different types of skills – firm specific, industry specific and general skills – are related to different types of product market strategies:

- The standardized mass production is based on standardised tasked executed by semi-skilled employees. The diversified mass production requires besides the standardized skills in certain degree unstandardised firm-specific skills executed by skilled employees. The high-quality product niche market strategy requires high skilled employees with industry specific skills. At least, the diversified quality production requires high skilled employees with a combination of specific firm skills and a high level of industry specific skills. The different skill-regimes required specific systems of social protection. The first aspect to take in consideration is the degree of transferability. It is obvious, that the firm-specific skills are hardly transferable from one enterprise to another, the industry –specific skills form one economic sector to another and that the general skills are highly transferable. Estevez-Abe et al [2001: 149] started from the assumption that employee designed their training career based on rational choice taking into account three main factors:

(i) “The initial cost of acquiring the skills as, for instance, when a workers receives a reduced wage during the period of training;

(ii) The future wage premium of specific skills; and

(iii) The risks of losing the current job and the associated wage premium” [Estevez-Abe et al 2001: 149-150].

The workers take their decision also on the background of the institutional context as, for instance, the configuration of the system of social protection in its dimension of employment
The social function of higher education in the social models of the European knowledge society

protection, unemployment protection and wage protection. “The particular combination of employment protection and unemployment protection determines the profile of skills that is likely to emerge in an economy. Thus employment protection increases the propensity of workers to invest in firm-specific skills, whereas unemployment protection facilitates investment in industry-specific skills. The absence of both gives people strong incentives to invest in general skills. These predictions are borne out by the comparative data, which show that most countries combine either low protection with general skills, or high protection with specific skills.” [Estevez-Abe et al 2001: 151] The interrelation between employment protection, unemployment protection and skill types can be schematized in the following way.

<table>
<thead>
<tr>
<th>Unemployment protection</th>
<th>Employment protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Industry-specific skills</td>
<td>Industry-specific firm specific skill mix</td>
</tr>
<tr>
<td>Example: Denmark</td>
<td>Example: Germany</td>
</tr>
<tr>
<td>General skills</td>
<td>Firm-specific skills</td>
</tr>
<tr>
<td>Example: United States</td>
<td>Example: Japan</td>
</tr>
</tbody>
</table>

Source: Estevez-Abe [2001: 154]

Based on indexing the mechanism of social protection in the dimension of employment, unemployment and wage protection, Estevez Abe et al [2001: 178] worked out the interrelation between social protection and skill profile: “one combining weak employment and unemployment protection with a general skills profile, represented by the Anglo-Saxon countries and Ireland; and one combining high protection on at least one of the two social protection dimensions with firm- and/or industry-specific skills, represented by the continental European countries and Japan. The latter groups contains two sub-groups: a) one group emphasises more the employment protection and firm-specific skills, as for instance Japan and Italy; b) the other group focused more on unemployment protection and industry-specific skills, for instance Denmark, the Netherlands, and Switzerland.

Anderson & Hassel [2008] criticized that the binary distinction between LME and CME is to abstract covering inadequately the social reality. Taking into account the works on welfare

93 “Employment protection refers to institutionalized employment security. The higher the employment protection, the less likely that a worker will be laid off even during economic downturns. Unemployment protection means protection from income reduction due to unemployment, and can thus reduce the uncertainty over the wage level throughout one’s career. Wage protection, finally, is an institutional mechanism that protects wage levels from market fluctuations. In this section, we first contrast the significance of employment protection and unemployment protection for firm-specific and industry-specific skills.” (Estevez-Abe et al 2001: 150).
regimes, they propose to make, at least, a distinction between two type of CME: the “social democratic” and the “conservative-corporative” type. They also introduce a second distinction to describe the education regimes: the distinction between work place vocational training and the school based vocational training, which give place to establish two ideal types of training regimes: The workplace based occupational training system is based on apprenticeship in the enterprises. The students spent the majority of their learning time at the workplace, but complemented by learning periods at school (a couple of days per week at school or blocked training modules) The contents of the training programme is defined in cooperation with the social partners. On the contrary, in the school-based occupational training system the students spend the majority of their time in school, but also a considerable part at a workplace. However, they haven’t the status of employee and they don’t receive wages. The schools are generally run by the state. The contents are defined, as well as in the other system in cooperation with the social partners. [Andersen & Hassel 2008]. On the background of the change from industrial based economies to more service oriented economies, “the difference in the extent of state involvement in the financing, delivery and regulation of VET shapes the ways in which CMEs respond to deindustrialisation. Firm based VET systems are vulnerable to economic swings and structural economic change whereas school-based systems with significant financial support form the state are better able to weather conjunctural storms and to adjust to new economic conditions. Moreover, school-based systems have a distinct advantage over form-based systems in the prevision of general skills that are so central to the service economy.” [Andersen & Hassel 2008: 30].

A revision of the works based on the VoC-approach shows that the complementarity between mechanisms of social protection, skill systems and production system is focused on the vocational education and training. The higher education is only considerate in a residual way. However under the perspective of economic politics, higher education and vocational education and training must be considered as part of the education regimes and has co-evolved [Powell & Solga 2008: 3] “The changing status of certain types of status is indicated by specific qualifications and certificates by particular organizations in diverse fields due to development processes, both incremental and transformative, in skill formation institutions. In other words, both sectors involved in skill formation, HE and VET, must react to global isomorphic pressures, but the relationship and division of labor between the two sectors has a different balance in each nation” [Powell & Solga 2008: 3]. In the year 2002, Raffe [2002] discussing the trends to unify the academic education and vocational training stated four possible scenarios for the relation between vocational and higher education:

1) The role of academic and vocational tracks is maintained as the basic characteristics of the education regime. Meanwhile the academic tracks will be less reformed, the efforts of
reforms are mainly focused on the vocational training track strengthen or perhaps lengthened it maintaining the proper identity of the vocational training system. This includes also the possibility to encourage progression form the vocational track to a separate sector of higher education clearly distinguished from the academic higher education. Raffe mentioned as example for this scenario Germany, but he includes here also Denmark, the Netherlands, Austria and Switzerland.

2) The academic and vocational tracks are submitted under reforms loosing the vocational education its distinct identity. The post secondary education will be finely graduated around more permeable educational hierarchies. Difference between learning types will be substituted partially by study and attainment levels. The system becomes more complex varying the place of vocational and academic education across the different system segments. As probable examples are mentioned Norway, Sweden, Australia, New Zealand and Scotland.

3) The academic and vocational tracks are maintained emerging an intermediate track as a new stratum between general academic and vocational education. Japan is an example for this scenario.

4) In the fourth scenario elements of the first three scenarios are combined [see Raffe 2002: 9].

Which scenario will become reality in the different countries depends on the institutional arrangement “at the education/ economics nexus and the distance and fluidity between sectors and the respective organisations and certifications as well as their functional equivalents” [Powell & Solga 2008: 13].

Coming back to the classification of capitalism proposed by Amable, he proposed a description function of education in the following dimensions: (1) product market, (2) labour market, (3) financial system, (4) social protection.

The Table 5 summarizes the relations between of various types of capitalism and the characteristics of the education system. Comparing the various VoC approaches, we may note the following. There are differences between the Amable [2005] and Sapir [2005] views, but not only in the number of types of social models of capitalism (five versus four) but on other aspects too. For example, Sapir [2005] has an intention to measure both “social” (i.e. equity) and “economic” (i.e. efficiency) performances of the various models of capitalism. In addition he advises how to shift from one model into another one. When we look at the possibilities of changes from one social model into another one, we have to be aware that, within the EU, the importance of the Rhineland (“Continental”) and Mediterranean countries is crucial, they generate two-thirds of the GDP in the EU and 90 per cent of that of the Euro zone. As Sapir notes [Wolf, 2005] Countries belonging into these two clusters of the social model, “… should
become either Nordic or more Anglo-Saxon. The core of the change would be the removal of explicit employment protection. Strict employment protection is particularly inappropriate at a time of rapid economic change, when old jobs and traditional practices become outmoded. It is better to promote employability than protect employment, while insuring against the short-term impact of unemployment … Italy for example, could never turn itself into either Finland or the UK. But one thing seems clear: merely resisting change is economically and politically suicidal. It may be difficult for Europeans to learn from one another. Not to do so could prove even more painful.”

| Table 5. Relation between education and institutional complementarities of VoC |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Product market | Labour market | Financial market | Social Protection |
| Education system | Labour force with general skills favours structural change | Low specific skills investments, hence no hold-up problems. Less need for high employment protection | A private higher education system requires an easy supply of credit to students | No strong demand for specific skills protection |
| Education system | High levels of education and skills make sophisticated consumers on the domestic market | Demand for specific skills protection, i.e. employment protection. Skill levels allow for (offensive) flexibility | - | Demand for specific skills protection even with a high competitive pressure, hence the need for the welfare state |
| Education system | A highly educated workforce makes sophisticated consumers | An efficient secondary education system provides an homogeneous labour force ready to acquire skills within corporations | - | A workforce with general skills does not need so much a high level of welfare expenditure |
| Education system | Labour force with specialised skills allows to follow stable industrial strategies | Demand for specific investments’ protection | - | High demand for specific skills protection |
| Education system | The skill level of the workforce prevents to engage in high-tech activities | The education system does not allow a large highly-skilled workforce | - | Low specific investments lower the demand for protection |


When we intend to learn from each other – and this is one of the most important implications of our research on the higher education’s related risks in the knowledge based society – it is necessary to be aware at least the following two methodological risks of any comparative analysis and assessment. Firstly, when we are describing and assessing the various approaches dealing with VoC (e.g. Esping-Andersen, 1990, Hall-Soskice, 2001, Amable, 2005 etc.), it is necessary to stress that the distinctions between the various country–clusters of the social
models (i.e. Anglo-Saxon, Nordic, Continental, etc.) are not watertight. In spite that, the typologies are revealing. Secondly, in comparing the “social” and “economic” performances of these models, we have to adopt the concept of “reflexive” or “intelligent” benchmarking instead of the mechanical one. The core meaning of the “reflexive benchmarking” – Schienstock, 2004:18 – stresses if the following: “Reflexive benchmarking, or intelligent benchmarking is less about deciding ‘what is best’ or ‘what universal truth’ can be derived from comparison. The identification of ‘best practice’ is not primary goal of reflexive benchmarking. Particularly in situation of fundamental transformation process, mechanic benchmarking is hardly possible, as institutions are becoming increasingly fragile. The aim of reflexive benchmarking is to be able to gain a better understanding of one’s own solutions, their strengths and weakness, when seen in light of what others do, and what options they see.”

In this perspective of the “reflexive benchmarking”, the next sub-section is an assessing exercise and we intend to compare the performance of the European universities with the Americans, and to identify the positions of the NESOR project countries. The reason to compare the EU universities performances with the American ones is that – until now – for the majority of scholars USA is the emblematic country or the “best practice” of the knowledge-based society.

3.2.3. The learning performance of national social production systems

The NESOR-project included 6 EU-member states, which cover the whole spectrum of the European welfare regimes except the liberal regime. The social-democratic regime isn’t presented by a Scandinavian country, but a newcomer in this ideal-type: the Netherlands. The conservative welfare regime is covered by Austria, meanwhile Spain and Italy represented the Mediterranean regime. At least, Poland and Hungary are two countries of the transitional welfare regimes. There is no liberal welfare regime under the NESOR-countries. But for comparative reasons, we include additional in this tentative statistical analysis countries, which are considered prototypes of the liberal, conservative and social-democratic welfare regimes: France, Germany, Sweden and the United Kingdom.

This range of countries and types of welfare regime allows us to analyse the interrelation of welfare regimes and learning performance. The selection of the countries puts the emphasis of the analysis obviously not on the core types of this approach (liberal, conservative and social-democratic) but on the marginal types. In this line, our analysis isn’t focused on the paradigm of

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94 In the recent discussion about welfare regimes, the Netherlands is frequently classified as a social-democratic regime or alternatively as a hybrid regime. In this article, we followed the argumentation of the social-democratic regime.
the varieties of capitalism CME or LME, but of countries between these two types. Our analysis of the learning performance will be centred on the education structure of the active population of the 25 EU-member states and its development since 2007 putting mayor attention to the so-called “knowledge workers” or “graduate workers”

3.2.3.1 “Knowledge worker” or what?

The term “knowledge worker” describes those workers who are participating most effectively in the knowledge-society and the knowledge economy. The OECD proposed the following definition: “Knowledge workers” are conceived as these employees who are working in knowledge sectors or workers with specific skills and competencies. At the core of the concept lies the idea that knowledge workers are involved in the creation and utilisation of knowledge. Generally they are defined as high-skilled workers, who are working in the services sectors or services tasks. There are different definitions proposed as for example:

- **Symbolic analyst**: This term was proposed by Reich [1992] distinguishing the “symbolic analytic services” from direct personal services and routine production services. Workers in the first of these categories are professionals, upper-middle managers and above, and others who create, modify, and synthesise knowledge.

- **Science and technology (ST) personnel as high-skilled workers**: The Canberra Manual [OECD, 1995] includes different ways to classify science and technology workers. The Manual defined this category as follows: The persons “who fulfil one or other of the following conditions: a) successfully completed education at the third level in an S&T field of study; b) not formally qualified as above, but employed in a S&T occupation where the above qualifications are normally required.” [OECD 1995: 16] Combining qualification and occupation, the OECD identifies both education and skills needed for different types of jobs as the basis for the S&T workers [Cervantes, 1999].

- **Knowledge worker according to new occupational groupings**: Lavoie & Roy [1998] proposed a concept of knowledge workers, which goes beyond the concept of S&T workers. From their point of view, the knowledge economy has an increasing need of high skilled workers whose skills are not exclusively related to science and technology. Their concept of knowledge workers includes also the tasks of the control, management and co-ordination of activities. For this reason, they redefine occupational categories based on the use and production of knowledge by workers and reclassify economic activities according to tasks

---

95 The OECD conceived science in the broad sense of the term as all kind of science and not only natural science. It starts form a definition of technology as “the application of knowledge”, and more narrowly dealing with tools and techniques for carrying out the plans to achieve the desired objectives. (OECD 1995: 16)
...performed by workers. They classify the occupational categories in five domains: knowledge, management, data, services and goods.

The concept of knowledge workers seems quite unclear in its definition. It has a proximity to the category of Science and technology workers as the OECD Canberra Manual proposed, but it goes beyond this category including also managing functions in the concept of “knowledge worker”. As such, it includes the groups 1-3 of the Standard Occupational Classification. In this sense, the concept of “knowledge worker” is the aggregation of the categories of high skilled worker in one category. For the objective of this studies, which is oriented to the University systems it seems more appropriate to use instead of this broad category the nearer category of “science and technology workers” proposed by the OECD making reference to the ISCO groups 2 and 3, or talking about educational levels, the term “graduate worker” as the ISCED levels 5 and 6 makes reference to the citizens with an higher education degree.

3.2.3.2 “Graduate workers” in the EU

In the first step, we analyse the distribution of the active population among education levels. Based on the data of Eurostat about the active population by highest level of education attained, we classify the member states of the EU-27 at ISCED-level 5-6 using 5% scales establishing as the lowest groups these countries with less then 15% of the active population within this ISCED-level and as the highest groups these countries with more the 35% of the active population in this ISCED-group

Obtaining these groups, we will have a look at the percentage of the ISCED-level 3-4 in relation to the ISCED-level 5-6. This level makes reference to an educational level equivalent to vocational education and training. The data indicates a general increment of the active population with a highest attained education at ISCED-level 5-6. The exception is Lithuania where this data decreased form 42,5% to 32,1%, which is compared to other EU-member-countries still a high degree. The data indicates also a high diversity between the different countries. In countries like Romania, Portugal, the Czech Republic, but also in Slovakia, Italy, Malta and Austria, higher education provision can be considered as elite provision. On the other extreme, there are countries like Cyprus and Belgium, but also in a minor degree the Netherlands, the United Kingdom, Spain, Lithuania, Estonia, Ireland and Finland, which have expended the higher education provision to around one third part of the active population. It seems that these countries are on the way towards the generalisation of the provision of higher education. The other countries could be classified as mass provision or on the way to mass provision of higher education.
The social function of higher education in the social models of the European knowledge society

Table 6: Active population by highest level of education attained (in % over Total) between 15 and 74 years

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
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<td>3_4</td>
<td>5_6</td>
<td>0_2</td>
<td>3_4</td>
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<td>34,2%</td>
<td>57,2%</td>
<td>8,6%</td>
<td>25,0%</td>
<td>61,7%</td>
</tr>
<tr>
<td>Portugal</td>
<td>78,2%</td>
<td>12,3%</td>
<td>9,5%</td>
<td>70,4%</td>
<td>15,3%</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>10,3%</td>
<td>77,8%</td>
<td>11,8%</td>
<td>7,1%</td>
<td>78,5%</td>
</tr>
<tr>
<td>Slovakia</td>
<td>9,4%</td>
<td>80,0%</td>
<td>10,6%</td>
<td>7,2%</td>
<td>77,6%</td>
</tr>
<tr>
<td>Italy</td>
<td>45,2%</td>
<td>42,2%</td>
<td>11,4%</td>
<td>39,3%</td>
<td>45,0%</td>
</tr>
<tr>
<td>Malta</td>
<td>72,7%</td>
<td>19,8%</td>
<td>7,5%</td>
<td>61,4%</td>
<td>21,5%</td>
</tr>
<tr>
<td>Austria</td>
<td>20,9%</td>
<td>63,9%</td>
<td>15,2%</td>
<td>19,4%</td>
<td>62,9%</td>
</tr>
<tr>
<td>Hungary</td>
<td>18,4%</td>
<td>65,4%</td>
<td>16,2%</td>
<td>14,1%</td>
<td>65,2%</td>
</tr>
<tr>
<td>Poland</td>
<td>15,6%</td>
<td>72,1%</td>
<td>12,3%</td>
<td>10,1%</td>
<td>68,4%</td>
</tr>
<tr>
<td>Slovenia</td>
<td>20,4%</td>
<td>63,1%</td>
<td>16,5%</td>
<td>15,4%</td>
<td>61,3%</td>
</tr>
<tr>
<td>Latvia</td>
<td>14,1%</td>
<td>66,6%</td>
<td>19,3%</td>
<td>14,4%</td>
<td>61,9%</td>
</tr>
<tr>
<td>Germany</td>
<td>17,2%</td>
<td>54,6%</td>
<td>23,5%</td>
<td>16,8%</td>
<td>59,1%</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>24,6%</td>
<td>55,0%</td>
<td>20,4%</td>
<td>16,3%</td>
<td>59,3%</td>
</tr>
<tr>
<td>Greece</td>
<td>42,1%</td>
<td>38,9%</td>
<td>19,0%</td>
<td>35,3%</td>
<td>39,5%</td>
</tr>
<tr>
<td>EU27</td>
<td>30,1%</td>
<td>47,2%</td>
<td>20,6%</td>
<td>25,5%</td>
<td>49,1%</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>32,7%</td>
<td>44,5%</td>
<td>20,7%</td>
<td>30,6%</td>
<td>40,6%</td>
</tr>
<tr>
<td>France</td>
<td>31,8%</td>
<td>44,1%</td>
<td>24,0%</td>
<td>26,3%</td>
<td>44,3%</td>
</tr>
<tr>
<td>Denmark</td>
<td>22,0%</td>
<td>52,6%</td>
<td>24,0%</td>
<td>25,7%</td>
<td>42,6%</td>
</tr>
<tr>
<td>Sweden</td>
<td>21,0%</td>
<td>49,2%</td>
<td>29,4%</td>
<td>15,6%</td>
<td>53,7%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>30,7%</td>
<td>44,6%</td>
<td>24,1%</td>
<td>25,6%</td>
<td>43,4%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>28,1%</td>
<td>37,0%</td>
<td>25,9%</td>
<td>22,7%</td>
<td>44,7%</td>
</tr>
<tr>
<td>Spain</td>
<td>54,3%</td>
<td>19,0%</td>
<td>26,7%</td>
<td>44,6%</td>
<td>23,6%</td>
</tr>
<tr>
<td>Lithuania</td>
<td>12,3%</td>
<td>45,2%</td>
<td>42,5%</td>
<td>8,4%</td>
<td>59,6%</td>
</tr>
<tr>
<td>Estonia</td>
<td>12,5%</td>
<td>57,9%</td>
<td>29,6%</td>
<td>10,5%</td>
<td>55,8%</td>
</tr>
<tr>
<td>Ireland</td>
<td>33,3%</td>
<td>40,3%</td>
<td>23,6%</td>
<td>25,3%</td>
<td>38,3%</td>
</tr>
<tr>
<td>Finland</td>
<td>24,9%</td>
<td>43,7%</td>
<td>31,4%</td>
<td>18,9%</td>
<td>46,9%</td>
</tr>
<tr>
<td>Cyprus</td>
<td>33,4%</td>
<td>38,7%</td>
<td>27,9%</td>
<td>24,3%</td>
<td>40,2%</td>
</tr>
<tr>
<td>Belgium</td>
<td>32,1%</td>
<td>36,0%</td>
<td>31,9%</td>
<td>24,1%</td>
<td>39,4%</td>
</tr>
</tbody>
</table>

Source: Eurostat

The analysis of the relation between the categories of medium educated and high educated active population indicates that the countries which tends to a general provision of higher education tends also to a higher equilibrium between these two categories. An extreme and exceptional case is Spain, where the active population with the higher education attained at the level 5-6 is higher then these of the level 3-4.
Table 7: Classification of the Learning performance of the EU-countries (2007)

<table>
<thead>
<tr>
<th>3-4 Active Population</th>
<th>0-2 Active Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;20%</td>
<td>20-30%</td>
</tr>
<tr>
<td>&gt;33,3%</td>
<td>Portugal, Malta</td>
</tr>
<tr>
<td>25%-33,3%</td>
<td>Spain</td>
</tr>
<tr>
<td>25%-16,6</td>
<td></td>
</tr>
<tr>
<td>&lt; 16,6</td>
<td></td>
</tr>
<tr>
<td>25-50</td>
<td>30-33,3%</td>
</tr>
<tr>
<td>&gt;33,3%</td>
<td>Italy</td>
</tr>
<tr>
<td>25%-33,3%</td>
<td>Greece</td>
</tr>
<tr>
<td>25%-16,6</td>
<td>Luxembourg, France</td>
</tr>
<tr>
<td>&lt; 16,6</td>
<td>Denmark</td>
</tr>
<tr>
<td>50-75</td>
<td>25-33,3%</td>
</tr>
<tr>
<td>&gt;33,3%</td>
<td>Romania</td>
</tr>
<tr>
<td>25%-33,3%</td>
<td>Austria</td>
</tr>
<tr>
<td>&lt; 16,6</td>
<td>Germany</td>
</tr>
<tr>
<td>75</td>
<td>&gt;33,3%</td>
</tr>
<tr>
<td>25%-33,3%</td>
<td>Hungary, Poland</td>
</tr>
<tr>
<td>&lt; 16,6</td>
<td>Slovenia, Latvia</td>
</tr>
<tr>
<td></td>
<td>Bulgaria, Sweden</td>
</tr>
<tr>
<td></td>
<td>Lithuania, Estonia</td>
</tr>
<tr>
<td>&gt;75</td>
<td>Czech Republic</td>
</tr>
<tr>
<td></td>
<td>Slovakia</td>
</tr>
</tbody>
</table>

Source: Eurostat

Taking the high-educated population as reference groups and based on the data of the year 2007, we can block the countries in the following way:

- The countries with a trend to a general provision of high-educated active population. The group includes 9 countries: Belgium, Cyprus, Estonia, Finland, Lithuania, Ireland, the Netherlands, Spain, and the United Kingdom. The two transitional countries Lithuania and Estonia show also a strong degree of vocationalism, meanwhile the other countries with the exception of Spain have a medium degree of vocationalism. Lithuania and Estonia have also a low rate of low-educated active population; meanwhile Cyprus, Belgium, Finland and the United Kingdom has a medium and Ireland, the Netherlands a relative high rate.

Spain is an exception with a low degree of vocationalism, typical for countries of the Mediterranean welfare regime, and with a rate of high-educated active population higher then the rate of the medium-educated active population.

In six of these seven countries, the higher educated active population has grown from 2000 to 2007. The exception is Lithuania. In three of these six countries the increment of the
higher educated active population is accompanied by an increase of the degree of vocationalisation (United Kingdom, Spain, Finland) as well as in Lithuania. In the Netherlands, Ireland and Estonia, the weight of the active population at the level 3-4 has decreased.

In all of these countries, the weight of the low educated active population has increased. However, in the Netherlands and Ireland, the rate of this educational group is still over 25% of the total active population. Only the post-communist countries Lithuania and Estonia have a low level of low educated active population (under one sixth part of the active population.)

- The third group with a mass provision of high-educated active population is formed by Hungary, Poland, Slovenia, Latvia, Germany, Bulgaria, Greece, Luxembourg, France, Denmark and Sweden. Seven of these countries show also in 2007 a relative high degree of vocationalism (Hungary, Poland, Slovenia, Latvia, Germany, Bulgaria and Sweden). All this countries shows at the same time a low level of low-educated active population, with the exception of Germany, which has a medium rate. The other four countries show a medium degree of vocationalism. With the exception of Greece, which has typically for a Mediterranean welfare regime a high rate of low-educated active population, all these countries have a relative high rate of low-educated active population.

With the exception of Denmark and Latvia, all these countries have reduced the rate of the low-educated active population. The reduction is generally situated at a level above 4% points. Only in Luxembourg, the reduction turned around of only 2% points and Germany hasn’t practically experienced a reduction.

In 6 of these 11 countries, the rate of the medium-educated active population has decreases (Hungary, Poland, Slovenia, Latvia, Luxembourg and Denmark). In the other 5 countries, the degree of vocationalism has increased.

- At least, the fourth country group has an elite provision of high-educated active population. 7 countries are forming this group: Austria, the Czech republic, Italy, Malta, Portugal, Romania and Slovakia. The countries of the transitional or the conservative welfare regimes have a strong or a relative strong degree of vocationalism. The countries of the Mediterranean welfare regime have a low or medium degree, which is accompanied by a high rate of low-educated active population. Two of the three countries of the transitional regimes (Czech republic and Slovakia) have a low rate of low-educated active population, meanwhile Romania shows a relative high rate. At least, Austria ha a medium rate of low-educated active population.
The social function of higher education in the social models of the European knowledge society

Table 8: Educational Structure of occupation by Occupational categories (2000)

<table>
<thead>
<tr>
<th>ISCED</th>
<th>TOTAL</th>
<th>isco1</th>
<th>isco2_3</th>
<th>isco4_5</th>
<th>isco6_8</th>
<th>isco9</th>
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<tr>
<td>3-4</td>
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<td>45</td>
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</tr>
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<tr>
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<td>71</td>
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<td>66</td>
<td>17</td>
<td>2</td>
<td>52</td>
<td>45</td>
</tr>
<tr>
<td>D</td>
<td>16</td>
<td>55</td>
<td>24</td>
<td>9</td>
<td>46</td>
<td>39</td>
</tr>
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<td>A</td>
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<td>4</td>
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<td>42</td>
<td>12</td>
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</tr>
</tbody>
</table>

Source: Eurostat

Table 9: Educational Structure of occupation by Occupational categories (2007)

<table>
<thead>
<tr>
<th>ISCED</th>
<th>TOTAL</th>
<th>isco1</th>
<th>isco2_3</th>
<th>isco4_5</th>
<th>isco6_8</th>
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<td>30</td>
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</tr>
<tr>
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<td>14</td>
<td>54</td>
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<td>9</td>
<td>48</td>
<td>43</td>
</tr>
<tr>
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<tr>
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<tr>
<td>I</td>
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<td>45</td>
<td>16</td>
<td>39</td>
<td>46</td>
<td>15</td>
</tr>
</tbody>
</table>

Source: Eurostat

3.2.3.3 Science and Technology workers in the EU

Complementing this analysis, we will now have a look on the distribution of the ISCED-levels among the occupational categories (see Table 8). We will limit this analysis on the NESOR-countries and four additional countries covering the whole rage of welfare regime types: Germany, France, Sweden and the United Kingdom. For analytical reasons we have aggregated
the ISCO-groups 1 and 3 (S&T-workers). The ISCO-group 4-5 (services workers), ISCO groups 6-8 (manual workers). Besides, the analysis includes the ISCO-group 1 (managers and high public occupations) and ISCO-group 9 (elementary occupations). The ISCO-group 0 of army forces is excluded form the analysis as well as the group of no-responses.

The analysis of the data indicates that we aggregate the analysed countries in the following groups:

a) The countries with a high degree of vocationalism in all occupational groups, that means the ISCED level 3-4 is the most relevant in all occupational groups (or at least more or less such important as the most relevant group). This group includes Austria, Germany, Poland, Hungary and Sweden. This is accompanied by a high rate of high qualified workers in the categories of the S&T-workers (OSCO group 1-3) and service workers.

By ISCO-categories, we found

- Under the managers and high public administration occupation, a high degree of vocationalism accompanied with a higher rate (Hungary) or a lower but even high rate of high-qualified workers.

- Under the S&T workers obviously a high rate of high-qualified workers, but also a high degree of vocationalism. In one case (Austria), the rate of the medium qualified workers is higher then the high qualified workers.

- Under the service workers a high rate of qualified workers. In the occupational group, two sub-groups can be distinguished: on one side the transitional countries (Poland and Hungary) with a low rate of unqualified workers (under 10%) and on the other side Austria, Germany and Sweden, with a medium rate of unqualified workers (between 15 and 20%) in this category.

- Under the manual workers a high or very high rate of qualified workers. Similar to the service occupations, we can distinguish two groups in respect to the rate of low-qualified workers. In one side Hungary and Poland (with a rate between 15 and 20%) and the other three countries (with a rate between 20 and 30%). In respect to the rate of high-qualified workers, Germany and Austria forms an own group with a rate around 10%.

- Also the elementary occupations show a high or relative high rate of qualified workers, which is in generally higher than the rate of unqualified workers (except in Hungary). In Hungary and Poland, there practically there are no high-qualified workers working in elementary occupations. On the contrary, Austria, Germany and Sweden have in comparison to the other countries a medium rate of high-qualified workers in this category (between 3 and 6%)
b) The countries with a high rate of higher education, a medium level of vocationalism and a high rate of unqualified workers as France, the Netherlands and the United Kingdom.

By ISCO-categories, we found

- Under the managers and high public administration occupation, a high rate of high-qualified workers accompanied with a medium rate of unqualified workers (around 15%). In France and the United Kingdom the rate of high qualified workers is higher than the of qualified workers.

- Under the S&T workers obviously a high rate of high-qualified workers, accompanied by a medium to high degree of vocationalism. In comparison to the other countries, also the rate of unqualified workers is high in the occupational group.

- Under the service workers a medium rate of qualified workers (around 55%). These countries show the highest rate of high-qualified workers (between 10 and 20%) in this category. They show also a medium rate unqualified workers (between 25% and 35%). Only Spain and Italy show a higher rate of unqualified workers in this category.

- Under the manual workers a medium rate of qualified workers (between 50 and 65%). These countries show also in this category a medium rate of unqualified workers (between 30 and 45%) and of high-qualified workers.

- In the elementary occupations, these countries shows a relative high rate of unqualified workers, which is higher generally then the rate of the qualified workers in this category or similar in the case of the United Kingdom. They have in comparison to the other countries also medium rate of high-qualified workers in this category (between 4 and 7%)

c) At least, the third group composed by Spain and Italy show a high rate of unqualified workers (44% and 39%). However, both countries show different picture in respect to the other two education categories. Meanwhile, Italy has medium level of qualified workers similar to the country group before, Spain has besides the United Kingdom the highest rate of high-qualified workers.

By ISCO-categories, we found

- Under the managers and high public administration occupation, a high rate of unqualified workers accompanied in the case of Spain by a medium rate of high-qualified workers and the lowest level of qualified workers. In the case of Italy, the rate of high-qualified workers in this category is the lowest among the analysed countries and the rate of qualified workers is similar to the other countries.
- Under the S&T workers, Spain shows the highest level of high-qualified workers. Also the rate of unqualified workers is with 7% among the highest. In respect to the qualified workers, it shows the lowest rate among the analysed countries. Italy shows an inversed picture in this category making reference to the qualified and high-qualified workers.

- A similar picture shows the education structure of the category of the service workers in both countries. Both countries shows the highest rate of unqualified workers under the service workers, but Spain shows also the highest level of high qualified and the lowest level of qualified workers in comparison to the other analysed countries. On the contrary, Italy has a medium level of qualified service workers and a low level of high-qualified service workers.

- Under the manual workers, Italy and Spain show a high rate of unqualified workers (more than 65%) and the lowest rate of qualified workers. This is accompanied in the case of Italy, with a rate of high-qualified workers similar to the transitional countries, meanwhile Spain shows with 13% the highest rate of high qualified workers among the analysed countries.

- The majority of the elementary occupations (around 70%) is occupied in both countries by unqualified workers. The difference is again in the percentage of high qualified workers. In Spain 9% of workers in elementary occupations are high qualified, meanwhile this rate is in Italy with 3% comparable to the first country group.

<table>
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<th>isco4-5</th>
<th>isco6-8</th>
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<td>1</td>
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</tr>
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<td>8</td>
<td>6</td>
<td>-4</td>
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</tr>
</tbody>
</table>

Source: own calculation based on EUROSTAT data
In the period from 2000 to 2007, the education structure within the occupational categories has varied in all analysed countries, but we can still observe the aggregation of the countries in the mentioned groups in 2000.

In the first group with the dominant vocationalism, Sweden has increment in the period form 200 to 2007 the rate of qualified workers reducing the rate of unqualified workers in all occupation categories. The rate of high-qualified workers decreased slightly in the categories of knowledge workers. In Hungary and Poland, on the contrary, the vocationalism decreased slightly or is maintained, the rate of low qualified workers decreased and the rate of high-qualified workers increased. The increment of high-qualified workers is significant in the occupational groups of managers and high public administration personal, S&T workers and service workers. Germany and Austria show only slight variations maintaining the vocationalism as dominant element incrementing slightly the rate of high-qualified workers and reducing slightly the rate of low-qualified workers.

| Table 11: Temporary employment by ISCED-level 3-4 and 5-6 for the years 2000 and 2005 (in % of the total employment at the same education level) |
|---|---|---|---|---|---|---|---|---|
|                        | Upper secondary and post-secondary education - levels 3-4 | Tertiary education - levels 5-6 | Upper secondary and post-secondary education - levels 3-4 | Tertiary education - levels 5-6 |
|                        | Between 25 and 39 years | Between 40 and 64 years | Between 25 and 39 years | Between 40 and 64 years |
| eu27                   |      |      |      |      |      |      |      |      |
| Germany                | 9,4  | 7,3  | 13,4 | 11,1 | 4,3  | 4,3  | 3,8  | 4,0  |
| Spain                  | 29,6 | 22,5 | 28,7 | 27,2 | 14,0 | 8,0  | 9,5  | 4,8  |
| France                 | 11,9 | 13,2 | 11,9 | 14,3 | 5,3  | 5,5  | 4,4  | 3,9  |
| Italy                  | 8,7  | 7,1  | 15,3 | 14,0 | 3,6  | 2,9  | 3,9  | 2,6  |
| Hungary                | 5,6  | 5,3  | 5,2  | 4,3  | 3,6  | 3,5  | 2,5  | 2,4  |
| Netherlands            | 11,6 | 8,5  | 12,8 | 11,0 | 5,7  | 5,2  | 4,7  | 4,8  |
| Austria                | 3,7  | 3,6  | 10,2 | 6,5  | 2,4  | 1,9  | 2,9  | 1,8  |
| Poland                 | 22,9 | 3,7  | 18,3 | 1,4  | 11,7 | 3,0  | 5,0  | 1,8  |
| Sweden                 | 12,1 | 12,4 | 20,1 | 15,7 | 6,7  | 6,6  | 5,7  | 6,5  |
| United Kingdom         | 3,6  | 3,7  | 5,6  | 6,8  | 2,9  | 3,5  | 5,4  | 7,1  |

Source: Eurostat

The country group formed by France, the Netherlands and the United Kingdom increments the rate of high-qualified workers reducing in the same period the rate of unqualified workers. In
the United Kingdom increased also the rate of qualified workers. On the contrary, in the **Netherlands** this rate decreased meanwhile in France it is in 2007 at the same level as in 2000.

In Italy and Spain, the rate of unqualified workers is reduced in favour of an increment of the rate of qualified and high-qualified workers.

At least, two comments to some significant changes:

a) In all countries, except **Austria** and **Italy**, the education level of the ISCO-category 1 has improved. This is reflected in general in an increment of the rate of high-qualified workers (except in Sweden), but in some countries as Germany, Spain, Sweden, and the United Kingdom also of the rate of qualified workers in this category.

b) The rate of high-qualified workers increased practically in all countries in all occupational categories. The exception is Germany, where the rate of high-qualified workers increased only in the ISCO-1 category. In other words, the general increment of high-qualified workers produced a higher dispersion of these workers among all categories. It must be underpinned, that this affects also the category of elementary occupations, especially in **Spain** (9%) and the United Kingdom (7%).

### 3.2.3.4 Education systems

Sociological studies on education have show that the education system is following its own logics having an imperfect relation with the economic system (labour market). For this reasons, is seems necessary to contrast the data of the education structure of the national labour markets with the data about the structure of the education system itself. The report can’t provide an in depth analysis of the configuration of the education system. For this reason, we have taken two indicator areas: the societal expenditure in (higher education and the number of higher education students.

The societal expenditure on education provides a first impression of the consideration of education in the different countries. The expenditure in education shows a highly diverse picture with two differentiate country groups and several specific cases. The main country group formed by France, Poland, Hungary, the United Kingdom and **Austria** shows a public expenditure of around 5,5% of the GDP, which is clearly above the EU-27 average. The other country group formed by Germany, **Italy** and **Spain** has a public expenditure in education clearly lower than the EU-27 average. Sweden is a specific case within these countries, but in the line of the other Scandinavian countries showing a high public expenditure in education. Also the Netherlands is a specific case, as it doesn’t fit in any group.

If we have now a look on the public and private expenditure in education, the picture changes in
respect to some countries. The United Kingdom shows now a similar level of education expenditure then Sweden. France, Poland, Hungary and Austria forms a country group with a total education expenditure in turn of 5.7% of the GDP considerably higher than the EU-27 average. Germany and the Netherlands have an expenditure rate in turn of 5.05 of the GDP, which is lower than the EU-average. And Italy and Spain with an expenditure level in turn of 4.65% of the GDP are far from the EU-27 average.

In the United Kingdom and Germany is the private educational rate (in turn of 1% of the GDP) considerably higher then the EU-27 average. The other countries have rates in turn of 0.5% of the GDP. The exception is Sweden with 0.19% of the GDP.

| Table 12: Indicators of societal expenditure in education 2000 - 2005 |
|-------------------------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Total public expenditure on education as % of GDP, for all levels of education combined | Expenditure on educational institutions from public sources as % of GDP, for all levels of government combined | Expenditure on educational institutions from private sources as % of GDP, for all levels of education combined | Expenditure on educational institutions from public and private sources as % of GDP, for all levels of education combined |
| S     | 6.97  | -0.34 | 6.19  | 6.10  | 0.09  | 0.19  | 0.20  | -0.01 | 6.38  | 6.30  | 0.08  |
| GB    | 5.45  | 0.81  | 5.03  | 4.43  | 0.60  | 1.25  | 0.78  | 0.47  | 6.28  | 5.21  | 1.07  |
| F     | 5.65  | -0.38 | 5.43  | 5.78  | -0.35 | 0.55  | 0.56  | -0.01 | 5.98  | 6.34  | -0.36 |
| PL    | 5.47  | 0.60  | 5.38  | 4.86  | 0.52  | 0.55  | :     | :     | 5.93  | :     | :     |
| HU    | 5.45  | 0.95  | 5.12  | 4.30  | 0.82  | 0.49  | 0.58  | -0.09 | 5.61  | 4.88  | 0.73  |
| A     | 5.44  | -0.22 | 5.04  | 5.28  | -0.24 | 0.47  | 0.33  | 0.14  | 5.51  | 5.61  | -0.10 |
| EU27  | 5.04  | 0.36  | 4.72  | 4.62  | 0.10  | 0.67  | 0.56  | 0.11  | 5.39  | 5.18  | 0.21  |
| DE    | 4.53  | 0.08  | 4.17  | 4.19  | -0.02 | 0.92  | 0.97  | -0.05 | 5.09  | 5.16  | -0.07 |
| NL    | 5.19  | 0.33  | 4.59  | 4.11  | 0.48  | 0.43  | 0.45  | -0.02 | 5.02  | 4.56  | 0.46  |
| I     | 4.43  | -0.04 | 4.23  | 4.35  | -0.12 | 0.44  | 0.44  | 0.00  | 4.67  | 4.79  | -0.12 |
| ES    | 4.23  | -0.05 | 4.10  | 4.17  | -0.07 | 0.53  | 0.60  | -0.07 | 4.63  | 4.77  | -0.14 |

Source: Eurostat

Comparing these data with the objective to increment the societal expenditure in education shows that only the United Kingdom, Hungary and the Netherlands have incremented the total public expenditure in education as well as the EU-27 in general. Germany, Italy and Spain have more or less maintained the level of public expenditure, meanwhile the other 3 countries (Austria, France and Sweden) have reduced the level of public expenditure in education.

Taking now as reference the total expenditure in education institutions, we observe that only the United Kingdom, Hungary and the Netherlands have incremented this expenditure as well as the EU-27 in general. In the case of Hungary and the Netherlands, this increment is due
exclusively to the increase of the public expenditure in education institutions, as well as in Poland. In the United Kingdom has increment also the private expenditure. The other countries have more or less maintained the expenditure level or have reduced it. In these countries, the public expenditure in education institutions has been maintained more or less at the level of 2000 (Germany, Italy and Sweden), but in other countries (France, Spain, Italy and Austria) it has been reduced more than one percentage of the GDP. Only in the United Kingdom and Austria has increased the private expenditure in education institutions.

Looking now briefly on the total expenditure on higher education, we observe that Sweden, Austria and the Netherlands have in 2005 a considerable higher public expenditure as the EU-27. France, Poland and the United Kingdom showed a HE-expenditure level slightly higher
then the EU-27, meanwhile Germany is slightly under this average. **Hungary**, but overall **Spain** and Italy showed an expenditure gap in comparison to the EU-27 and the other analysed countries. Excepting Sweden, **Austria** and the **Netherlands**, the public expenditure in higher education of all countries under scrutiny and also the EU-27 average is under the level of the USA, but considerably higher than in Japan.

There is a large set of institutional factors that shape the HE systems’ environment and provide a possible explanation for the performance gap between the different countries. One of them is the level of both private and public expenditure on higher education. Table 13 intends to give an overview about the level and structure of higher education expenditures in some European countries, Japan and the US.

It is remarkable that the US spends lot more on higher education than any European country in terms of % in GDP. In addition there are differences in the structure of higher education expenditures, e.g. to the higher proportion of private contribution in the US. The ‘Nordic’96 countries, especially Denmark and Finland, spend more than the other European countries, mainly from public sources. **Poland** (1,6% of the GDP) and Greece (1,5%) have achieved in 2005 more or less the level of the Scandinavian countries. Also Portugal shows a high investment level in relation to the GDP. On the contrary, the Czech Republic, **Italy** and the Slovak republic showed in 2005 a low level of expenditure in higher education.

It is remarkable that only three countries (Ireland, **Spain** and Sweden) have reduced their investment in higher education in relation to the GDP. Two other countries haven’t increment their investment: **Italy** and **Hungary**. All other European countries, mentioned in the OECD-study, have increasing their expenditure. It is worth noting that Poland shows the higher growth incrementing their expenditure in higher education from 0,8% to 1,6% of the GDP.

It is also worth noting, that only in four countries this is accompanied by an increase of the public investment in relation to their GDP: Denmark, France, Greece and **Poland**. In the majority of the countries the level of expenditure has been maintained and in 5 countries the level public expenditure has decreased: Germany, Ireland, **Italy**, Portugal and the UK.

In the majority of the EU-countries covered by the OECD-data, the private investment in tertiary education is in turn of 0,1 or 0,2 % of the GDP. There are five countries showing in 2005 a higher private investment rate: **Italy** (0,3), **Netherlands** (0,3), **Poland** (0,4) Portugal (0,4) and the UK (0,3). All countries maintain the level of private expenditure (Belgium and Sweden) or incremented it –generally in turn of 0,1%. But there are three countries (**Hungary**, Ireland and **Spain**, which have reduced the rate of private expenditure in 5 of GDP.

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96 In the followings the classification of social models developed by A. Sapir will be used. See more in Sapir 2005a
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The OECD-data from 2005 show also a worth noting difference in the use of the higher education expenditure. There is a series of countries, which invest the higher education expenditure in more then 33% in R&D activities: Sweden, Finland, Germany, Netherlands, United Kingdom and Italy. This indicates a strong research orientation of these national higher education systems. A second group of countries invest between 25% and 33% in R&D activities: Belgium, Austria, France Ireland and Spain. The rest of the countries (including Hungary and Poland), with a stronger educational orientation, invest less then 25% in R&D activities. The effect of these differences in the spending of money in higher education is that the difference in the expenditure in higher education in the strict sense of the term is lower then in the total expenditure.

The exposed data suggest that the richer NESOR-countries (Austria, the Netherlands) has maintained more or less their level of expenditure in higher education in turn of 1,3% of the GDP. Poland converted to a frontrunner in the higher education expenditure achieving the investment rate of the Scandinavian countries doubling its expenditure in tertiary education. But its investment level in terms of expenditure per student is still one of the lowest in the EU. Hungary and Spain spent in 2005 around 1,1% of their GDP in higher education. But in spite of the increment of the expenditure per student, Spain shows a reduction of higher education expenditure in terms of GDP. Hungary maintains its level of expenditure but reducing the investment per student. Italy is the country with the lowest level of higher education expenditure among the NESOR-countries.

These visible differences among the NESOR countries refer not only to the volume but also to the structure of expenditures. Poland, the Netherlands and Italy showed a comparatively high private quote of higher education expenditure (≥ 0,3% of the GDP). The other three countries have a private expenditure rate of 0,2% or 0,1%.

The gross enrolment rate of higher education is taken as another indicator of the learning performance. The UNESCO defined this rate as the ratio between the total number of students enrolled in a given educational level and the size of the population, which, according to its age, “should” be enrolled in the course. In respect to higher education, different age groups have been taken as reference. In a recent document about education, the Commission used the cohort of 18-39 years as reference group, others used the cohort of 18-24 years or 18 to 29 years. For reason of comparison to recent EU documents, we follow here the proposal of the Commission using the cohort of 18-39 years as reference group. The other indicator is the percentage of the students in higher education about the total students and pupils.

The data indicates that the Scandinavian countries and the majority of the transitional countries, including Poland and Hungary, have gross enrolment rates above the EU-27 average as well as Belgium, Greece and the UK. The countries of the conservative welfare regimes and the
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majority of the Mediterranean countries are above the EU-average, as well as countries like Bulgaria, Romania, the Netherlands and Slovakia.

<table>
<thead>
<tr>
<th>Country</th>
<th>2006 (as % of all pupils and students)</th>
<th>Variation</th>
<th>2006 (all students as % of 18-39 years population)</th>
<th>Variation</th>
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<td>0.0%</td>
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<td>1.86%</td>
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</table>

Source: own calculation based on Eurostat online consulted 05/05/2009

The transitional countries show the highest growth of the enrolment rate in the period from 2000 to 2006, which are situated above 3% with the exception of the Czech Republic (2.44%). The
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Scandinavian countries and Cyprus have also growth rate above the 3%. These rate are clearly above the EU-average. Also the Netherlands and the Czech Republic show a growth higher the EU-average. All the other countries, including Italy, have a growth rate under the EU-average. In Bulgaria, Portugal and Spain the enrolment rate is decreasing. And Austria maintains practically the level of 2000.97

Table 15: Life-long learning (adult participation in education and training)
Percentage of the population aged 25-64 participating in education and training over the four weeks prior to the survey

<table>
<thead>
<tr>
<th>Country</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>Variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>7.5</td>
<td>8.6</td>
<td>11.6</td>
<td>12.9</td>
<td>13.1</td>
<td>12.8</td>
<td>5.3</td>
</tr>
<tr>
<td>Belgium</td>
<td>6.0</td>
<td>7.0</td>
<td>8.6</td>
<td>8.3</td>
<td>7.5</td>
<td>7.2</td>
<td>1.2</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>1.2</td>
<td>1.3</td>
<td>1.3</td>
<td>1.3</td>
<td>1.3</td>
<td>1.3</td>
<td>0.1</td>
</tr>
<tr>
<td>Cyprus</td>
<td>3.7</td>
<td>7.9</td>
<td>9.3</td>
<td>5.9</td>
<td>7.1</td>
<td>8.4</td>
<td>4.7</td>
</tr>
<tr>
<td>Czech Rep.</td>
<td>5.6</td>
<td>5.1</td>
<td>5.8</td>
<td>5.6</td>
<td>5.6</td>
<td>5.7</td>
<td>0.1</td>
</tr>
<tr>
<td>Germany</td>
<td>5.8</td>
<td>6.0</td>
<td>7.4</td>
<td>7.7</td>
<td>7.5</td>
<td>7.8</td>
<td>2.0</td>
</tr>
<tr>
<td>Denmark</td>
<td>18.0</td>
<td>24.2</td>
<td>25.6</td>
<td>27.4</td>
<td>29.2</td>
<td>29.2</td>
<td>11.2</td>
</tr>
<tr>
<td>Estonia</td>
<td>5.4</td>
<td>6.7</td>
<td>6.4</td>
<td>5.9</td>
<td>6.5</td>
<td>7.0</td>
<td>1.6</td>
</tr>
<tr>
<td>Spain</td>
<td>4.4</td>
<td>4.7</td>
<td>4.7</td>
<td>10.5</td>
<td>10.4</td>
<td>10.4</td>
<td>6.0</td>
</tr>
<tr>
<td>EU27</td>
<td>7.2</td>
<td>8.5</td>
<td>9.3</td>
<td>9.8</td>
<td>9.7</td>
<td>9.5</td>
<td>2.3</td>
</tr>
<tr>
<td>Finland</td>
<td>17.3</td>
<td>22.4</td>
<td>22.8</td>
<td>22.5</td>
<td>23.1</td>
<td>23.4</td>
<td>6.1</td>
</tr>
<tr>
<td>France</td>
<td>2.7</td>
<td>7.1</td>
<td>7.1</td>
<td>7.1</td>
<td>7.6</td>
<td>7.4</td>
<td>4.7</td>
</tr>
<tr>
<td>Greece</td>
<td>1.1</td>
<td>2.6</td>
<td>1.8</td>
<td>1.9</td>
<td>1.9</td>
<td>2.1</td>
<td>1.0</td>
</tr>
<tr>
<td>Hungary</td>
<td>2.9</td>
<td>4.5</td>
<td>4.0</td>
<td>3.9</td>
<td>3.8</td>
<td>3.6</td>
<td>0.7</td>
</tr>
<tr>
<td>Ireland</td>
<td>5.5</td>
<td>5.9</td>
<td>6.1</td>
<td>7.4</td>
<td>7.3</td>
<td>7.6</td>
<td>2.1</td>
</tr>
<tr>
<td>Italy</td>
<td>4.4</td>
<td>4.5</td>
<td>6.3</td>
<td>5.8</td>
<td>6.1</td>
<td>6.2</td>
<td>1.8</td>
</tr>
<tr>
<td>Lithuania</td>
<td>3.0</td>
<td>3.8</td>
<td>5.9</td>
<td>6.0</td>
<td>4.9</td>
<td>5.3</td>
<td>2.3</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>7.7</td>
<td>6.5</td>
<td>9.8</td>
<td>8.5</td>
<td>8.2</td>
<td>7.0</td>
<td>0.7</td>
</tr>
<tr>
<td>Latvia</td>
<td>7.3</td>
<td>7.8</td>
<td>8.4</td>
<td>7.9</td>
<td>6.9</td>
<td>7.1</td>
<td>0.2</td>
</tr>
<tr>
<td>Malta</td>
<td>4.4</td>
<td>4.2</td>
<td>4.3</td>
<td>5.3</td>
<td>5.4</td>
<td>6.0</td>
<td>1.6</td>
</tr>
<tr>
<td>Netherlands</td>
<td>15.8</td>
<td>16.4</td>
<td>16.4</td>
<td>15.9</td>
<td>15.6</td>
<td>16.6</td>
<td>0.8</td>
</tr>
<tr>
<td>Poland</td>
<td>4.2</td>
<td>4.4</td>
<td>5.0</td>
<td>4.9</td>
<td>4.7</td>
<td>5.1</td>
<td>0.9</td>
</tr>
<tr>
<td>Portugal</td>
<td>2.9</td>
<td>3.2</td>
<td>4.3</td>
<td>4.1</td>
<td>4.2</td>
<td>4.4</td>
<td>1.5</td>
</tr>
<tr>
<td>Romania</td>
<td>1.0</td>
<td>1.1</td>
<td>1.4</td>
<td>1.6</td>
<td>1.3</td>
<td>1.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Sweden</td>
<td>18.4</td>
<td>31.8</td>
<td>32.1</td>
<td>33.4</td>
<td>32.0</td>
<td>32.4</td>
<td>14.0</td>
</tr>
<tr>
<td>Slovenia</td>
<td>8.4</td>
<td>13.3</td>
<td>16.2</td>
<td>15.3</td>
<td>15.0</td>
<td>14.8</td>
<td>6.4</td>
</tr>
<tr>
<td>Slovakia</td>
<td>8.5</td>
<td>3.7</td>
<td>4.3</td>
<td>4.6</td>
<td>4.1</td>
<td>3.9</td>
<td>-4.6</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>21.3</td>
<td>27.2</td>
<td>29.0</td>
<td>27.6</td>
<td>26.7</td>
<td>20.0</td>
<td>-1.3</td>
</tr>
</tbody>
</table>

Source: Eurostat online data base consulted 28/04/2009

Looking at the participation rate of the HE-students on the total number of students and pupils, the situation changed for the countries like Spain, Romania, Italy, Ireland and Bulgaria, which

97 Austria shows in 2005 in relation to 2000 still a negative growth rate.
have a participation rate above the EU-average, but also for the United Kingdom, Denmark, and Belgium, with rate under the EU-average. **Hungary** and **Poland** are also above the EU-27-average, meanwhile **Austria** and the **Netherlands** are under this average.

The majority of the transitional countries (including **Hungary** and **Poland**) show actually a HE-participation rate above the EU27-average as well as three big countries of the Mediterranean welfare regimes as Greece, **Spain** and **Italy**. Also Ireland is above the EU27-average. All the other countries are under the average, that means all the countries of the Scandinavian welfare regime (including the **Netherlands**), the conservative welfare regime (including **Austria**) as well as the United Kingdom, the other countries of the Mediterranean welfare regimes (Portugal, Cyprus and Malta) and two transitional countries (Czech Republic and Slovakia).

However, the transitional countries (including **Hungary** and **Poland**) are showing the highest increments of the HE-students in the whole population of pupils and students among the EU-countries. In general, the growth rate is above 4%-points among the transitional countries with the exception of Bulgaria. Also Cyprus, Greece and the United Kingdom show similar high increments. Also Sweden shows still an increment of the HE-participation rate above the EU-27 average. All the other countries including the **Netherlands** and **Italy** show increments lower then the EU27-average. Exceptions are **Spain** and **Austria**, where the HE-participation rate decreased in the period form 2000-2007.

All countries under scrutiny of the NESOR-project except Austria and Spain have increased the percentage of higher education students over all pupils and students as well as the gross enrolment rate. The highest increase of the enrolment rate show **Hungary** (3.9) and **Poland** (4.0). The **Netherlands** (2.6) and **Italy** (2.0) have more moderate growth rate. **Austria** maintains in 2006 practically the same enrolment rate than in 2000 and **Spain** experimented a reduction of its gross enrolment rate. The participation rates of the NESOR-countries show practically the same evolution then the gross enrolment rate.

As the lifelong learning policy is one of the main pillars of the Lisbon strategy we will present some data about lifelong learning in the EU. The data shows that the Scandinavian countries are the frontrunners in lifelong learning with participation rate higher the 20% of the population aged between 25 and 64 years. They are followed by the United Kingdom, the **Netherlands**, Slovenia, **Austria** and **Spain** with a participation rate between 10% and 20%. At the cue are these countries like Bulgaria, Greece, **Hungary**, Portugal, Romani and Slovakia with a participation rate lower then 5%. All the other countries including **Poland** show participation rate between 5% and 10%.

Making reference to the NESOR-countries, we observe that **Austria**, the **Netherlands** and **Spain** are in the second group with participation rates between 10& and 20%. The **Netherland**
can be considered a country with a strong lifelong policy during the last decade. Austria and Spain have, on the contrary, developed their lifelong strategy overall in the last five years with an increment of 5.3%-points in Austria and 6%-points in Spain. Poland and Italy are countries with a participation rate in lifelong learning between 5% and 10% showing moderate growth rate. At least, Hungary forms part of the country group with the lowest lifelong learning participation rate, which has increased form 2002 to 2003 in turn of 1.6% points but decreasing later again form 4.5% to 3.6%. Hungary, Italy and Poland show a lifelong participation rate lower than the EU-27 average; meanwhile the Austria, Netherlands and Spain are higher.

3.3. The national higher education policies under social aspects

On the background of the described variety of the social production models and of the learning performance, an analysis of the national higher education policies under the perspective of its social function can be effectuated. This chapter will include besides the structural response from the national higher education systems also the response in respect to the didactical orientation as one of the main challenges of the higher education system under the perspective of the European Social Model is the adaptation to the lifelong learning strategy and to the promoted paradigm change ‘from teaching to learning’.

Lifelong learning is defined as “all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within a personal, civic, social and/or employment-related perspective.” Lifelong learning includes therefore all possible stages of learning from pre-school to post-retirement, at all possible forms from formal learning to non-formal and informal learning. It established a relation between the acquirement of knowledge, skills and competence and the social and economic performance of the society. It includes also a switch from the teaching paradigm to the learning paradigm. It is worth noting that in the broader social, political and economic context, lifelong learning is seen as one of the main instruments to adapt the European society to meet these new challenges. The lifelong learning goes beyond the economic goals and promotes a more inclusive, tolerant and democratic citizenship to build up a better society. The European Union took at the beginning of the decade of the 2000 the decision to promote a new approach to education and training policies based on the framework of lifelong learning. This implies a shift from the traditional focus on institutional arrangement to provision of learning opportunities and its recognition as first step to a better society. The Lifelong learning strategy is closely linked to other parallel strategies like the European Employment Strategy, the European Social Strategy, Skills and Mobility Action Plan and especially the policy towards the European research area.

The lifelong learning strategy refers to the fact that, in a knowledge society:
- Competencies and skills become rapidly obsolete;
- People learn in many different ways, which are strictly connected with their own life paths and with the labour market;
- The attention shifts from the passive teaching of notions to the active, self-directed, learning of competencies and skills.

For such reasons, it becomes of the foremost importance to initiate actions to:
- support life wide and life long learning;
- evaluate and certificate (both qualitatively and quantitatively) education and life experiences to promote and support people’s mobility and employability.

The EU recognised the aforementioned drives and needs through a number of Communications and supported actions targeted to the field of Adult Education, at least from the year 2000 onwards. In recent years the higher education has been challenged by various new issues: among others the permanently increasing number of students or the fast changing knowledge demands of the labour market. Under the current circumstances there is a need for a paradigmatic shift in the methods how knowledge should be transferred in higher education.

Paradigm may be understood as a change of the dominant discourse - the way of thinking, making sense, deciding or behaving that prevails in a given sphere of social reality. In the case of the European project known as the Bologna Process and the Lisbon Strategy, the sphere to be changed is the system of national education (especially the sub-system of higher education).

The most general direction of change could be a transition from teaching to learning, i.e. from the inactive (neutral, not self-involving) to an active (self-steered, deeply involving) way of acquiring knowledge and skills by persons (individuals and groups) receiving higher education.

The educational paradigm which has been existing till now consists in imparting to pupils and students a certain amount of knowledge, skills and attitudes (competencies), recognized by different authorities as optimal for future occupational (vocational) tasks, defined more or less precisely. At present, in connection with the problems of emerging knowledge society, a profound change is needed in the paradigm, consisting in radically more intensive, more differentiated and more flexible educational activity of subjects educated on the higher (university) level. This change should be a transition from the inactive absorption of knowledge and skills to the conscious self-management of one's intellectual and behavioural resources, taking into consideration different social conditions and among others - requirements and limitations of the labour market.

Two ideal types of educational paradigms are differentiated: the “instruction” and the “learning” model [see Barr & Tagg, 1995]. The most important difference between the two models is, that the core aim of the instruction paradigm is to teach, whilst in the case of learning paradigm is to
create better environment for learning. The latter one is not purely output-oriented; the learning here is a mutual process wherein the actors take responsibility for the outcomes collectively. In other words it is a win-win situation where universities are not responsible merely for the degree to which students learn, but for the learning process as a whole. In the instruction paradigm the higher education institutions aim to transfer knowledge from a faculty to the students by offering courses and specific degree programs and assuring that the faculty stays current in their fields. The purpose is to offer courses. In the learning paradigm the institutions’ aim is not to transfer knowledge but to create suitable environments and possibilities that support students to collect and construct knowledge for themselves and to make students members of “learning communities” that are solving problems. Within this framework learning methods are continuously developed, tested, implemented and assessed.

In the two paradigms the evaluations criteria differ as well. In the instruction paradigm HE institutions’ performance is measured quantitatively: by the number of graduates, number of PhDs and research reputation. The teaching performance is peer-reviewed on the basis officially defined criteria. In the framework of learning paradigm the performance evaluation is more process-oriented and focuses on the skill-level and learning capacity of the students.

The teaching and learning structure of an institution in the instruction model is atomistic, therefore powerful and rigid. It means that the different parts of the teaching and learning process are handled as discrete entities where classes (parts) are prior to the whole. Institutions following the instruction paradigm organise courses and teachers into independent departments and program that rarely communicate with each other. The academic departments mainly represent coherent disciplines and are the basis for offering courses. In this system the task of the teacher is to “cover the material” as it is outlined in the disciplinary requirements. This environment leaves no place for experimental learning.

In the learning paradigm learning and teaching structure are holistic. It means that measurement of students’ performance is process-oriented that includes all stages of the learning process. From this perspective a mixture of intellectual and social skills such as problems solving and effective team participation is part of the learning programmes. Here not the means, such as lectures or courses are fixed but the results. This system provides more space for the actors to vary the learning and teaching tools in a constant seek for the most effective and efficient learning paths.

The two paradigms differ in the way they organise learning. The instruction paradigm views learning as an atomistic process. The central actor in the process is the teacher who delivers knowledge. Students here are seen as passive receiver. In such a model, any expert can teach. In the learning paradigm learning is a holistic process where the main actor is the learner. Therefore in this model students must take an active role in constructing their own knowledge.
In the learning model knowledge is not perceived as cumulative and linear but interactive and rooted in collective networks. Hence, in the instruction paradigm faculty member is an actor, while in the learning paradigm an “inter-actor” who specifies learning goals and focus on learning methods. In this model task-oriented, interdisciplinary or non-disciplinary groups and design teams operate.

### Table 16: Competence approach in the higher education system

<table>
<thead>
<tr>
<th>Areas of consideration</th>
<th>Classical approach</th>
<th>Competence approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point of reference</td>
<td>The reproduction and application of generated knowledge</td>
<td>The adaptation of the developed knowledge to growth, development and innovation</td>
</tr>
<tr>
<td>Focus or axis</td>
<td>The academic programme</td>
<td>The students, their competences and the development of the personal functionalities</td>
</tr>
<tr>
<td>Dominant access to knowledge</td>
<td>Transmit focus, Logical-deductive, Intellectual rationality</td>
<td>Social-constructive approach, Relevance of the emotional, the social and the cognitive Learning by and about action</td>
</tr>
<tr>
<td>Learning context</td>
<td>Real and virtual class rooms, Division between the academic time-space and the applied professionalism</td>
<td>Class rooms, social and professional contexts, Cases, problems and vital situations</td>
</tr>
<tr>
<td>Knowledge conceptions</td>
<td>Duality between theory and praxis, Priority of abstraction and application, Specialisation</td>
<td>Theoretical integration and practical action, Context relevance, Integration of diversity, Innovation</td>
</tr>
<tr>
<td>Concept of academic achievement</td>
<td>Adaptation to the norm</td>
<td>Generation of complex form of knowledge, Transfer capacity</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Normative in respect to the transmitted knowledge, summative and final</td>
<td>Criterial, In relation to the achieved state of development, Process oriented, summative and final</td>
</tr>
<tr>
<td>Orientation</td>
<td>Standardized in accordance to the official norms</td>
<td>In accordance with the intentions and abilities of the lecturer</td>
</tr>
<tr>
<td>Required attitude of the students</td>
<td>Adaptation</td>
<td>Responsibility, Cooperation, Reflexibility, Self-evaluation</td>
</tr>
</tbody>
</table>

Source: Rue 2007

The paradigmatic shift from teaching to learning (from knowledge acquisition to a competence approach and towards a learning outcomes approach) requires a reform in different spheres of the educational institutions:

- the design of the curricula and the study programmes,
- the form of cooperation with departments,
- the design and recognition of a variety of learning modes,
- the evaluation processes not only of the students, but also of the teachers performance,
- the innovation of the didactical methodologies.

To focus the higher education on competences implies a series of changes. It signifies, most probably, a break with the until now used approach (see table below).

The application of the competence approach should also cause internal changes in the higher education system. It responds to the switch from a teaching to a learning focus. It is pretended to put the student and his learning capacity in the centre of the design of curricula and study programmes. The use of the competence approach requires, in principle, to rethink the relation between didactical methods, learning modes\(^98\) and evaluation focused on the competence development in the course of the higher education.

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\(^{98}\) Learning modes are understood as the different scenarios in which the different activities of the lecturers and students takes place during the course in function to the proposals of the didactic actions, the tasks to be realized and the resources required for their execution.


**Austria**

<table>
<thead>
<tr>
<th>Welfare regime:</th>
<th>Conservative regime (Austria)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VoC</td>
<td>CME</td>
</tr>
</tbody>
</table>

**Learning regime**

**Active population**

a) Pertaining to the highly vocationalised countries.

b) Pertaining to the country group with an limited but slowly increasing high-qualified work force, a high rate of qualified work force and a medium, but decreasing rate of low-qualified work force.

ISCED 0_2: 19.4% (-1.5% from 2000 to 2007)
ISCED 3_4: 62.9% (-1.0%)
ISCED 5_6: 17.6% (+2.4%)

**Higher education pupils:**

Without significant changes, it is elite higher education
14.6% of all pupils and students (-0.9% from 200 to 2005)
9.7% gross enrolment rate in respect to 18-39 cohort (-0.3)

**Occupational groups by highest education level:**

- Pertaining to the country group, which shows a high rate of qualified workers in all occupational groups accompanied with a medium rate of graduate workers in the categories of knowledge workers.

- High-qualified workers concentrated in the ISCO-level 1 and level 2_3. At the ISCO-level 1 the rate of high-qualified workers is 31%, and has decreased 7% point form 2000 to 2007. The level of qualified workers is at 60% increasing in the same period 1%-points

- The rate of high-qualified workers in this occupational category 2_3 is at 39% in the year 2007, the same level as in 2000. In parallel, the rate of qualified workers has decreased from 57% to 56%.

- The rate of high-qualified workers has increased in all the other categories.

**Economic Structure (in % of GDP)**

Agriculture etc: 1.6%
Industry (excl.construction) 29.5%
Service Sector: 69.0% (Private 48.0; Public include. Social Serv. 21.0)

The Austrian debate about the social function of higher education is focused to bring the universities nearer to economy not only in education but also in research. In so far, the preparation of graduates for the labour market is more important compared to the achievement of social equality in higher education. Social equality isn’t considered as an important question for higher education delegating the responsibility to the government and enterprises.
From a global perspective overall higher education in Austria lags behind competitive world of higher education and research. The system in general suffers from over-regulation and traditional management systems. Inadequate investment in academic professionalism and human resources influence its performance negatively. Initiatives such as Bologna Objectives, Lisbon strategy and foundation of EHEA were anticipated to overcome all these problems with their likely to be more international and innovative objectives and autonomous organizational structures. However, this expectation has been realized little so far. Majority of the universities neither offer alternative curricula and teaching and learning methods (traditional methods remain) nor engage in research and graduate study. Relations with employers and industry are not systematized. Employment opportunities, professional qualifications, quality assurance and assessment of learning outcomes are not institutional objectives. In the face of these challenges, Austrian higher education institutions must re-conceive new roles being active in the creation of national and international education and knowledge society and at the same time they must continue to fulfil their traditional role of providing future "knowledge workers" with the necessary knowledge and competencies to succeed in an increasingly competitive labour market and complex society. Curricular adaptations to the demand of employers and labour market; lifelong learning strategies as a policy change; transition from education to learning; equal opportunities for all should be the goals of universities.

**Social dimension**

Equal opportunities for the graduates, so it seems in general terms, are not a core concern among universities any more in terms of gender due to gender parity in student numbers. This is contrasting with the clearly gender-based selection of study programmes by students: female students predominantly study language programmes (80+ %), similar rates were reported for pedagogy, nutrition sciences, care sciences, and veterinary medicine. Men continue to be highly over-represented in study programmes such as technical sciences and geosciences, technical engineering and metallurgy. Apart from recent and isolated cases, gender equality in university management is not a concern either; although it definitely should be (women are under-represented in leadership).

Another type of major inequalities indeed is related to immigration and cultural pluralism. Immigrants, and especially their second and third generations, are especially vulnerable in terms of their access to education and knowledge. Another problem is generally a still existing “class” stratification of low-paid employees. Statistically speaking, in Austria it is still highly probable that a low social status and education will be inherited by the children.
It is clear that HE institutions have a role regarding the social dimension, but in general they see the implementation of equal opportunities as a main responsibility for the government and industries, and not so much with their own institutions. Most you can see on equal opportunities is regarding special services on quality of teaching provision and involving students therein. Equal opportunities beyond the pure meaning of gender are not thematised in Austria seriously. Many universities still act without a comprehensive strategy regarding social inclusion. They do foresee special measures on counselling and guiding with respect to equal opportunities, although they have career centres for their graduates and for their Bologna activities.

One of the major new social risks in the emerging knowledge society for higher qualified persons is being unemployed. This is also the case in Austria. The role of HEIs is still in a need to develop education content, which prepares graduates towards flexibility, also flexibility in mind and thoughts. Further risks were found in the increased flexibility and mobility required by the labour markets, and the increased speed of changes - which is felt to aggravate the problem of loss of human capital. Paradoxically, high human capital can still mean an employment risk if graduates are not prepared to undergo constant re-training, learning and updating. This relates to the shaping of all basic curricula in a way that people “learn to learn”.

In their present provision, by and large, Austrian HEIs do not yet offer a sort of prevention or insurance to protect from this risk. From the related documents and interviews, it is fair to summarise that very few HE institutions in Austria have comprehensive plans to analyse the new social risks of exclusion in a systematic manner, which are emerging in the knowledge-based society – in particular in the labour market segment of high qualified personal. These plans are more limited to topical recommendations on a scientific base.

As regards to the importance of the "employability" of graduates in designing or restructuring the curricula, HE institutions show different strategies, which highly depend on the university and the special fields in their work. For example, the economic study programmes put much emphasis on that, while others do to a lesser extent. Nevertheless, it is also important to mention that most institutions today state that they want and try to provide higher employability for their students - they just don’t know, how to put this in practise. Consequently in general in Austrian universities of applied sciences, there is more inclination to introduce competences into curricula, which can be directly applied to jobs of the graduates. HE institutions can also respond to the new challenges emerging from new demands in the society by introducing economic subjects into all kinds of studies. That is quite widespread nowadays. To a certain extent it should be possible to include in all courses subjects that are actually not major to the field of studies, but play an important role as demands for society.

Another view is that the role of HE institutions is to support young people in resisting against various traps in the labour market (e.g. high-paid jobs that are against our aim of a positive
The social function of higher education in the social models of the European knowledge society

transformation process in society). Raising awareness, but not in the interest of the labour market and free market economy, rather against it, was mentioned as a core responsibility of universities by some other interviewees: “it should not be the labour market, which dominates society, it should be the other way around; society should dominate and shape the labour market”. Little evidence of such aims can be however found within the action of universities at large scale.

Nevertheless, the dialogue between universities and employers has improved over the years but still too little dialogue between schools and university is taking place. There are many initiatives now in several Austrian regions where schools are informed by universities about their studying programs and possibilities in Higher Education Institutions, what to expect from the University education. There is a program – Sparkling Science – starting now in Austria that includes society and research program, where research includes partners from society, not just schools, pupils and teachers but also other partners acting in the field of professional organisation for a transdisciplinary approach with a special focus on school education.

In some big HE institutions professional associations and employers are involved in the designing and restructuring of curricula with the relevant faculties and departments. For some of the programs, professional associations have a very strong interest and try to use their contacts to universities (e.g. in economics). Companies know university teachers through research projects and try to gain influence here. In Graz, a big engineering company has established very strong connections to the HE institutions. Officially they claim not to influence the study programmes directly, but actually they do.

Employers’ expectations from universities go far beyond the mere offer of scientific research programmes; they expect them to be up to date with present problems in society and economy, in order to solve them. Also, they want universities to teach their students to overtake responsibility and teach them general problem solution competences and core skills. According to surveys, also Austrian employers expect employees that are ready for the tasks of the enterprises. With regard to this straight-forward expectation a certain tension between universities and employers is emerging from our research: the kind of knowledge they produce, inspired by the Humboldtian ideal of Bildung, is still more generic and not so much specified and ready for a certain firm. At the same time, companies also expect that universities prepare the future employees for further learning and adaptation of their knowledge. It was felt that Austrian universities serve these expectations already to some degree.

Universities play a large role in this process for very straight-forward reasons; those reasons are related to the kinds of competences, which are required in HEIs. The part of this question, which is related to the creation of better work places is more complex, because several interdependencies are existing here. Of course Austrian HEIs’ contribute their share to the
The social function of higher education in the social models of the European knowledge society

creation of better work places: "one aspect can be put in a rather simple way: the quality of work places is also influenced by the quality of workers, not only the other way around". In other words, there are some exogenous demands for workers and the educational factor is that universities have to train people to meet this demand. And vice-versa: the better qualified and educated workers are, the bigger is the chance that work places adapt to a certain extent.

**Structural reforms**

Austrian Universities Act (2002) brought a new kind of autonomy to the universities what coincides with the implementations of the Bologna Process. At the same time, it is a double-challenging task for universities to deal with their relatively new status and at the same time follow the tasks of reorganisations. In this connection, the question of resources and prioritisation has been emerging. In general, since the UA 2002 universities have more (legal, political, financial) autonomy, as now university boards are the sole responsible body for decision-making. By means of so-called “service agreements”, the (public) universities negotiate with Ministry a specific programme, and a corresponding budget. In other words, financing is no longer coming forth by default, but is linked to a plan and performance of each university. This autonomy brought at the level of government aims at to some extend adaptation of main goals of common European educational policy to the national educational policy. Indirectly the new act also refers to the relation between the Lisbon strategy and national educational policy, by delegating universities to revise their role in realizing Lisbon strategy goals.

The Universities Act 2002 also makes student evaluations obligatory at public universities for the first time. Student involvement in the UAS sector is determined in the Evaluation Regulation of the UAS Council in that student representatives are to be involved in the process of self-evaluation in an adequate manner and in that the course providing body has to include the students’ statement to the self-evaluation report provided for the UAS Council. The Austrian Accreditation Council (AAC) also involves students as interview partners. As a rule the AAC contacts representatives of student unions at private universities if they are already established. The AAC invites student representatives of private universities to a round table discussion as a communication tool to bring forward their concerns. Furthermore a questionnaire is given to students to gain information for the external review of the AAC.

Regarding higher education institutions’ readiness to adjust their policies and strategies, academic programs, organizational structures and cultures, in order to become an engine for promoting the European Social Model, it was observed that HEIs would see this as an instrumentalisation of their role in society. Since Austrian universities only became truly
autonomous from political interference five years ago, it is rare that they see their role in enforcing political ideas. A global strategy of solidarity comes first. Universities are an integral part of the Austrian society, which has embarked on changes away from a predominantly state-dominated education system only recently. Since society changes, universities will have to, too. This is why the Lisbon strategy is often regarded a very ambitious strategy that provides crucial roles and goals for politics and society. However, realizing concrete action to implement (their share of) the Lisbon strategy, in universities is not really far grown yet. For the actual promotion of Lisbon strategy principles one representative view for the Austrian HE sector is, that „HE institutions can promote it by continuing to do what they already do. Science and university education should not focus too much on demands of the labour market (free market economy); they should rather try and force a transformation process towards greater social justice“. Nevertheless, in public discourse, Austrian HE institutions are not seen in a leadership role. However, one also frequently phrased view on this is that “the European universities have to play an essential role in Lisbon Strategy. There are also valuable attempts to promote policies, which would be suitable for Lisbon Strategy. But one cannot see coherent policy involvement of Austrian universities at the European level, and also not at the national levels. There’s a high degree of learning-by-doing and experimenting”.

At the same time, from a legal and policy point of view, it is found that Bologna process is highly relevant to the national Austrian HE policies. The Bologna Process has been the main trigger for curricular change, starting from the three-tier structure, but also as it “seeks to provide for an area of enhanced mobility for students and teachers in an atmosphere of increased transparency, trust and mutual recognition of qualifications among universities” [Dukiandjieva 2007]. The results of the corresponding national reform processes are inspired from and are compatible to the Bologna implementations. Indirectly, the changes emerging from Bologna also have an effect on the role of the universities in the application of the European Social Model. There is the perception that the new structure of curricula, as imposed in the Bologna Process, can only be the beginning of a process of restructuring. A substantial risk is that a part of this process might go wrong, even though there are very serious attempts in a lot of areas. Especially some of the Austrian Bachelor programmes are not optimally structured in the context of what is needed in the European knowledge society, in the German speaking countries (contrary to the Anglo-Saxon countries, where BA/MA is positioned somewhat different and has a longer history).

**Lifelong learning and didactical innovation in HE**

Across all universities, the implementation of new degree structures (ECTS) (Bachelor/Master) affects the design of life long learning programmes and modules. The most important
consequence is the implementation of ECTS across programmes. It enables HEIs to see programmes and LLL offers from a students’ point of view, a key factor for its success. only works when it’s seen from the student’s perspective. However, a counter argument was also presented during our interviews: “I don’t even really see lifelong learning strategies right now. Lifelong learning is one of those new terms that everybody uses but nobody actually knows what’s behind it. So I can’t answer this question before we haven’t defined the term first. To use e-learning technologies is a good idea, but the idea to have whole classes via Internet is ridiculous in my eyes. The idea behind that is more to save money”.

There are some systematic attempts for social mobility and flexibility of the graduates. The universities as an overall system have committed itself to this goal and have set up a programme to do so. Graz University has set up a programme called “Lebenspartner Universität” (University as a partner for life).

For adapting the higher education system to the new challenges in the labour market and knowledge society, Austrian HE institutions can provide several examples. Many of the newly developed BA/MA/PhD programs (due to the switch to the three-tier system under the Bologna requirements) are examples for that. Moreover, universities start more short courses that are also available for working people who cannot visit universities as full-time students. An example would be again the University of Graz with new programmes in biotechnology and architecture. But the overall participation and enrolment numbers in these programs remain low for the time being. From another point of view we also were confronted with the view that the labour market has to adapt themselves to new challenges, not the Universities. Regarding the adaptation of new educational offers to the new challenges in the labour market and knowledge society it is stated that without such new educational systems it is impossible to run universities.

Lifelong Learning as a new major future task of HEIs, “might make necessary that universities devote the bigger sections of their programs to creating the lifelong learning environment which in return will create the responsive public”. However, a new type of student (adult, practitioner, Lifelong Learner) also requires a new type of teaching methods. As for the promotion of lifelong learning study programmes, it is a shared understanding of university actors and stakeholders that they are at present only apt to create awareness. In principle, universities can establish LLL programmes, but very important would be the establishment of programmes, which are designed also for the benefit of working people. This, however, is not taking place at a large scale. In other words, lifelong learning is at present only a part of the curriculum, but just a small one. In order to accommodate and to constantly update the human and social capital it is seen important to have wide access to universities, and HEIs need a large number of people, not only a few very specialised experts. Current discussions in Austria, however, focus on the short term, and they still struggle with growing numbers of students, which cannot be dealt with in an
The social function of higher education in the social models of the European knowledge society

appropriate manner. The “mass university” is rather perceived as a problem, not as an objective that needs enhancement.

However, there are critical voices contrasting the professionalization function of higher education with its educational function. The role of Higher Education Institutions in the creation of better work places, more flexibility and mobility in work is “to support young people in resisting against various traps in the labour market (e.g. high-paid jobs that are against our aim of a positive transformation process in society), i.e. raising awareness, but not in the interest of the labour market and free market economy, rather against it”. In general, it should not be the labour market, which dominates society, it should be the other way around; society should dominate and shape the labour market. Universities educate young people so they can change society. They provide knowledge, so students can apply this knowledge. “To be more exact, it is about adapting the parts of society that politically rule science and knowledge. We have to continuously change policies, the society, and the economy, so we have to prepare the students for this challenge.”

There is the perception, that the universities aren’t putting lifelong learning high on their agenda. A member of the Students Council opines that universities do not think much about what happens to their students afterwards. There is a debate about lifelong learning. “but in reality it’s not a big issue.” Lifelong learning is in the Austrian university system weakly developed. Humpl [2008: Budapest presentation] stated that there are no regular study programmes for part time students, weak organisational structures and weak learning environments for part-time students. Lifelong learning is conceived as a private funded option for the universities paid by the students or the enterprises. For this reason the offered programmes changed frequently. An exception is the Danubia University Krems, which is the first lifelong learning university in Austria. The constant growth of its number of students is an indicator of the demand of lifelong learning. Another case is the system of polytechnics, which has a well established offer for employed students offering different organisation forms of lifelong learning (evening or weekend learning, block learning, seasonal learning and distance learning). But also in the area of the polytechnics, the cooperation with the employers is still weak. Humpl [2008: Budapest presentation] identified several obstacles for the full development of lifelong learning policies in the Austrian higher education system:

- Higher education and the lifelong learning funding structure are not very compatible based on the lack of traditions in private higher education funding;
- Problems to identify qualification needs due to the weak involvement of employers;
- The validation of prior learning isn’t well developed due to the low trust relation to other types of institutions;
- A gap in the orientation to non-traditional students.
However, once and where it is taken serious already, it clearly affects teaching and learning substantially. Students with work experience and of diverse age groups require a different interaction by and with the teacher [Daxner 2007, p. 13]. For instance, The University of Graz has new programmes in biotechnology, architecture and so on. They start more short courses that are also available for working people that cannot visit universities as full-time students. At the same time, students feel there are no really lifelong learning strategies at the moment – another member said that there are some good ideas but they haven’t been put in practise yet, because they don’t know how – “But this is a question of time. Institutions will find out.”

Alumni Clubs have existed at most universities as a means to keep contact with graduates, but also to channel their experiences from practice into university teaching offers. Some universities (Vienna, Graz and also Klagenfurt) have started to track the employment of their graduates; they keep contact with them trough questionnaires, and by offering LLL courses to them. Professional associations and employers are not regularly involved in restructuring the curricula - „but I think in programmes with only few students and few graduates, economy actually tries to be more emphasized, they have a very strong interest and try to use their contacts to universities. Companies know university teachers through research projects, for example, and try to gain influence here. For example, a big engineering company in Graz with strong connections to the institutions influences the programmes of course with experiences from practice.”

Concerning the establishment of flexible learning paths, the following outcomes derive from our data research: the use of ICT\(^9\) seems to be seen as the major mechanism and trigger for the introduction and implementation of new teaching methods\(^10\). However, in order to foster integration of ICT in teaching and learning at universities the Ministry set up an invitation for tender in 2005. (Full) Universities and Universities of Applied Science are invited to develop their typical blended learning-strategy\(^11\) and implement it. By 2006 nearly half of universities use ICT to serve students and teachers. In particular, the University of economics is leading the way, as it has shifted most of its introductory and under-graduate teaching to electronic levels – and thus freeing teachers, tutors and professors for personal interaction towards the end of

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\(^9\) According to Attwell (2007: 176), 4 types of distance learning via ICT exist: “The first is Distance Learning model where all or most teaching and learning provision is through technology; The second is the so called hybrid or dual model where learners have a choice of a distance, e-learning programme or traditional face to face teaching; The third and increasingly dominant model is the provision of blended learning with face-to-face provision being combined with Distance ICT based learning provision. The fourth model, common in institutions with little or no tradition of distance learning, is where technology is being used formally or informally to enhance classroom teaching.

\(^10\) Rightly, some critics argue that a shift from teaching to learning implies far more consequences than merely changing the medium of delivery from face-to-face towards ICT.

\(^11\) Blended learning is defined as a combination of the optimal aspects of personal presence at lectures or classes with e-learning. The social aspects of personal presence are brought into conjunction with the self-involving aspects of the use of ICTs.
studies, where such support is most needed. Also teacher training colleges (TTCs)\textsuperscript{102} apply ICT in teaching and learning. This has broad implications, as “technology provides access to students who would otherwise not have the ability to attend higher education institutions” [Attwell 2007: 175]. Through the efficient use of technology institutions can scale their operations in such way that the cost per student will decline as the schools expand enrolment. Some students are sceptical: “to use e-learning technologies is a good idea, but the idea to have whole classes via Internet is ridiculous in my eyes. The idea behind that is more to save money.”

“Universities are often paying lip-service, especially when it comes to strategies of social innovation and inclusion”. This sentence is an answer of one interviewee, which was confirmed – albeit in different wording but with equivalent meaning – by other interviewees. The gap between declarations and reality could also be observed in a Bologna Experts Training Conference at the University of Vienna in March 2008, where a member of the rectorate underlined the innovative orientation of his University by providing the example of the alleged support of transdisciplinary studies, such as “International Development Studies”. But that is only half the truth. If the current situation of this specific field of studies is analyzed more precisely, this support is nowhere to be found. In detail, it could be observed, that the very subject “IDS” is not only lacking support, but seems to be “blocked” precisely at the rectorate level. This can be illustrated with the fact that students as well as teaching staff are trying to institutionalise their subject at the University, but after five years of existence and several dialogues with the responsible entities, no improvements have yet taken place. Therefore, a better financial support structure would be as badly needed as many more positions for professors (currently, there is only the positions of “half a chair” which has to be shared with the Institute for African Sciences), rooms for teaching (at the moment, the African Sciences makes available their lecture halls for Development Studies), and administrative officers (currently one person for about 2250 students).

One of the most controversial issues is, like in several other study fields (and not only at the Vienna University), the contractual situation of the teaching and researching staff which does not provide the necessary (and legal) social security. “External” teachers, who are carrying the whole contextual teaching as well as a high amount of the administrative workload at IDS, stated that “without a certain amount of self-exploitation”, their lectures could not be held and from one term to another they do not know if their work is to be continued (because of short-term contracting).

\textsuperscript{102} Alas, the unfortunate division between HEIs training teachers for compulsory education (at Pedagogic Academies), and those for upper secondary schools (at Universities) is still maintained – with serious consequences for in/exclusion of pupils aiming at higher education.
However, not only this social dimension has to be considered but interdisciplinarity could contribute much to the development of a new – and desired by students – way of learning. The continuous exchange between students and teachers/scientists in the discipline is an essential part of this study program. Teachers and students agree on the fact, that blended learning, where everybody involved has to act very proactively, is a very positive outcome of recent changes. This way of knowledge transfer is frequently used in most of the courses (not only) at IDS. Nevertheless, other moves towards a higher amount of exchange do not seem to be fostered by the responsible entities. Concerning IDS, the poor institutional support is especially alarming if one takes into account the substantial meaning of transdisciplinary approaches in several fields of studies, as advocated for the further establishment of the EHEA.

According to a professor, the Bologna Process changed the system of teaching, it changes the curricula. But it did not change the really important things in teaching: “We still do not have room to try new models of teaching for example. It is just a way of focusing contents and adapting the texts of the curricula to a kind of European genre where everything has to be the same. It changed a lot, but not the most important issues.” He also said that the students are involved in the discussion of the new curricula in the Bologna-Process implementation. They will also have a voice in the application of the new curricula (who should teach what in which way).”
**Hungary**

<table>
<thead>
<tr>
<th>Welfare regime</th>
<th>Transitional regime (Hungary)</th>
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<tbody>
<tr>
<td>VoC</td>
<td>Active population:</td>
</tr>
<tr>
<td>Learning regime</td>
<td>a) Pertaining to the highly vocationalised countries.</td>
</tr>
<tr>
<td></td>
<td>b) Pertaining to the country group with an extended and increasing high-qualified work force, a high rate of qualified work force and a low decreasing rate of low qualified work force.</td>
</tr>
<tr>
<td>ISCED 0_2: 14.1% (-4.3% from 2000 to 2007)</td>
<td>ISCED 3_4: 65.2% (-0.2%)</td>
</tr>
<tr>
<td>ISCED 5_6: 20.6% (+4.4%)</td>
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<tr>
<td>Higher education pupils:</td>
<td>18.9% of all pupils and students (+5.4% from 2000 to 2005)</td>
</tr>
<tr>
<td></td>
<td>13.5% gross enrolment rate in respect to 18-39 cohort (+3.9)</td>
</tr>
<tr>
<td>From elite higher education to mass higher education.</td>
<td></td>
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<tr>
<td>Occupational groups by highest education level:</td>
<td></td>
</tr>
<tr>
<td>- Pertaining to the country group, which shows a high rate of qualified workers in all occupational groups accompanied with a high rate of graduate workers in the categories of knowledge workers.</td>
<td></td>
</tr>
<tr>
<td>- High-qualified workers concentrated in the ISCO-level 1 and level 2_3. At the ISCO-level 1 the rate of high-qualified workers is 50%, and has increased 5% point from 2000 to 2007. The level of qualified workers is at 48% decreased in the same period 4%-points</td>
<td></td>
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<tr>
<td>- The rate of high-qualified workers in this occupational category 2_3 is at 58% in the year 2007 and has increased 9%-points from 2000-2007. In parallel, the rate of qualified workers has decreased from 49% to 41%.</td>
<td></td>
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<tr>
<td>- The rate of high-qualified workers has increased in all categories except the category of manual work (ISCO6-8).</td>
<td></td>
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<tr>
<td>Economic Structure (in % of GDP</td>
<td></td>
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<tr>
<td>Agriculture etc: 4.3%</td>
<td></td>
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<tr>
<td>Industry (excl.construction 30.2%)</td>
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<tr>
<td>Service Sector: 65.5% (Private 42.1; Public include. Social Serv. 23.4)</td>
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</tbody>
</table>
As in other transitional countries, also in Hungary the massification is one of the most important characteristic features of the higher education systems. The Hungarian debate of the function of the higher education in the social production models follows some main strands related a) to the internal changes of the higher education from an elite education and training to a so-called mass education, b) the structural changes in the course of the adaption of the higher education system to the Bologna process; and c) the perceived need to strengthen the links between university and enterprises. The issue of the social function of the higher education in the sense of social inclusion and social equity seems absent in the Hungarian discussion. As in the European debate, higher education is perceived in its adaptive function so that the competence structure of the Hungarian society could be adapted to the requirements of the globalised society.

Another related issue is the employability of the graduates, which is partly reflected in the problem of mismatch between the knowledge supply provided of the higher education institutions and the real labour market needs. According to the interviewees the formation of the new structure in higher education (Bologna-process) is based on the demand represented by the students instead of the employers’ demand. In this respect there is a shortage of a new educational paradigm in the higher education. Among the stakeholders a dominant opinion is that there is a need for shift from the ‘old’ paradigm to a competence-oriented (higher) education system where only the output requirements are defined in advance.

The social dimension

The massification is one of the most important problems of the Hungarian higher education system undermining the quality of the HE system. All of them associated the increasing number of students with the radical decline of the level of both education and university performance. Table 17 provides information about the increase dynamics of the Hungarian higher education system between 1990 and 2005.

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</thead>
<tbody>
<tr>
<td>Polytechnic</td>
<td>35.038</td>
<td>84.224</td>
<td>88.631</td>
<td>93.392</td>
<td>98.983</td>
<td>102.380</td>
</tr>
<tr>
<td>University</td>
<td>41.563</td>
<td>91.822</td>
<td>95.440</td>
<td>99.763</td>
<td>105.927</td>
<td>109.912</td>
</tr>
<tr>
<td>Total</td>
<td>76.601</td>
<td>183.876</td>
<td>192.974</td>
<td>203.379</td>
<td>216.296</td>
<td>225.512</td>
</tr>
</tbody>
</table>

Source. Polónyi – Tímár 1996:100

The increase of the HE system in terms of number of students was 274 % between 1990 and 2005. The increase of the number of students was not accompanied by the necessary growth in
human, financial and infrastructural resources. The shift from this elitist to a mass-education was not followed by an appropriate transformation of the pedagogical methodology.

The various stakeholders and experts interviewed associated the increasing number of students with the radical decline of the level of both education and university performance.

The problem is that still the 1990s the Hungarian HE system was prepared for training the elite of the population. The methodology and the technology of the teaching were designed for the upper 10% of the population. It was not very much problematic how to teach the children of the upper and middle classes of the society. As a result of the social, economical and political transformation of the early 90s the situation has been radically changed: “we did not know how the economy and the labour market demands are evolving, what we have to train for and this was accompanied by a huge expansion of the HE system”. However, this expansion was not accompanied by a paradigmatic change in the teaching technology, so the quality was significantly decreasing. (Vice-president of a technical college)

1) The massification unequally affected the various disciplines. The proliferation was observable in such disciplines as economics, law, communication, human resource managers, etc. This increased number of fresh graduates in the earlier-mentioned fields did not meet the demands of the labour market (enterprises, public institutions). Thus, the supply side growth of the higher education system was driven by the needs and expectations of ‘students and their parents’ instead of the labour market regulation.

2) Another related issue is the employability of the graduates, which is partly reflected in the problem of mismatch between the knowledge supply provided of the higher education institutions and the real labour market needs. According to the interviewees the formation of the new structure higher education (Bologna-process) is based on the demand represented by the students instead of the employers’ demand and does not provides a solution to this problem.

The higher education expansion has consequences on the labour market for graduates. Until now, the increment of graduate workers has been absorbed in great part by the public sector, but also by the service sector. Additionally, the number of graduate under the entrepreneurs has increased too. However, it is also observable that an increasing number of graduate workers is employed in occupations, which requires less qualification [see Polónyi & Balázs 2008: 13]. Parallel, an increasing mismatch between the supply and the demand of graduate workers in respect to the knowledge fields and economic sectors is observed. Polónyi & Balázs calculated that there is in general more or less the double of graduate workers in the labour market than demanded. This oversupply is in percentages strong in agriculture, teaching and law, but can be detected in other fields as engineering. As the increment in the number of enrolled students doesn’t seem to be stopped, the worth scenario starts from the assumption that this mismatch
will perpetuated as well as the corresponding increasing inadequacy of the work places to the educational level. In addition, a ceiling out effect for the lower qualified work forces can be previewed.

Structural reforms

The Hungarian HE system is a dual system with practice-oriented polytechnics and theory-centred universities: the two types of institutions were independent from each other and there promoted only narrow possibilities of students’ mobility. The polytechnics and universities were clearly distinguished, the former was very much academy-orientated and emphasized explicit-type of knowledge, the latter focused much on practice-related teaching often in cooperation with one or more companies; the number of students was defined centrally, etc.

The massification process has slightly modified this model because almost all polytechnics wanted to become a university. This is because of financial reason: the biggest proportion of the HE institutions’ revenue is coming from the state and is based on the number of students; therefore, if the polytechnics wanted to develop they had to increase the number of their departments and their degrees as well. The implementation of the Bologna process - the most important structural change the Hungarian HE system has undergone in the recent decades - is embedded in this context and this favours the teaching of academic skills at the expense of practical training. Central problem is that by the introduction of the two-cycle higher education the decision makers intended to overcome of the rigidity of the dual HE system but the restructuring process was regardless to the institutional traditions. That means that the number and content of the BA programmes were created on the basis of the bargaining and assertive capabilities of the institutions whose interests were rather different.

The structural reform accelerated by the Bologna process led to rivalry between the different levels of the HE system (e.g. polytechnics vs. universities). Due to the weakness of the central legislation the result is a very rigid undergraduate system was created with a large number of over-specialised and academic-oriented programmes that make difficult the students’ mobility and, as a non-intended effect, contradict to the original strategic aim of Bologna Declaration.

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103 The Bologna Declaration defines six specified objectives in order to achieve the declared goals in the restructuring process of the European higher education area: (1) the adoption of easily readable and comparable degrees through European Credit Transfer Systems (ECTS) and the implementation of the so-called Diploma Supplement; (2) uniform degree structures through the introduction of the so-called two-cycle models where the first cycle is no shorter than 3 years, ends in a practice-oriented, labour market-relevant Bachelor-level degree. The second cycle is the postgraduate level offering Mater’s and PhD degrees; (3) establishment of ECTS-compatible credit system instead of determining the degrees only in years or in semesters; (4) increasing mobility of students, teachers, researchers and even the administrative staff; (5) European-level cooperation in quality assurance based on comparable methodology and criteria; (6) promotion of the European dimension of higher education through closer international cooperation and network creation.
The aim of the reforms was to create a more efficient organisational structure of the higher education institutions through integrating them into larger units.

An important characteristic of the implementation of the goals laid down in the Bologna Declaration is that the strategic and instrumental goals of the reform were not integrated. The emphasis has been put on the technically feasible elements of the restructuring: introducing the credit system and the two-cycle education model with a relatively little respect to the content of the changes. In the framework of the higher education autonomy the creation of the content and structure of the new undergraduate and graduate degrees was delegated to the universities and polytechnics without involving other social actors.

One of the most problematic areas is the introduction of the two-cycle higher education. The Hungarian HE system was strongly influenced by its German counterpart in representing a dual system with practice-oriented polytechnics and theory-centred universities: the two types of institutions were independent from each other and there promoted only narrow possibilities of students’ mobility.

The Hungarian legislation delegated the creation of the new BA and MA programmes to the competence of the universities and polytechnics. Because of weakness of central legislation in creating the two-cycle system the actors relied heavily on the traditions of the dual HE system. This means that the content of the BA programmes were created on the basis of the bargaining and assertive capabilities of the institutions whose interests were rather different. According to the interests of the higher prestigious universities being in better bargaining position the BA programmes are theory-oriented and the role of practical knowledge remained underplayed.

Until now, it is rather difficult to assess the impacts of this structural reform, due to the lack of necessary time perspective. However, there are stated several shortcomings of this reform implementation process. The 3+2 structural reform (i.e. Bologna process) was implemented without prior experiences-testing phase. In addition, the six specific objectives of the Bologna declaration were introduced in an inconsistent and piecemeal way, i.e. curriculum was redesigned according to the requirements of the BSC and MSC, however, the governance and performance evaluation of universities did not change, the labour market actors were not involved in the design of the curriculum, etc.

The “perverse” effects of the “3+2” reform did not help to re-define the division of labour and complementarities between the “academic” and “professional” professional universities as well as the relations, functions and roles of the “public versus” private higher educational institutions. Surprisingly, now stakeholders or experts in Hungary project raised the problems the “ownership” dimension in relations with the modernization and reform of the higher education system.
Another characteristic of the process is that the representatives of the firms and other social actors were not involved into the creation of the new two-cycle programmes. As a result the creation of the programmes’ content remained supply-driven, e.g. the number and content of the programmes reflects the existing capacities of the universities and polytechnics and does not correlate to the real labour market demands.

Another related issue is the employability of the graduates, which is partly reflected in the problem of mismatch between the knowledge supplies, provided of the higher education institutions and the real labour market needs. The formation of the new structure higher education (Bologna-process) is based on the demand represented by the students instead of the employers’ demand. In this respect there is a shortage of a new educational paradigm in the higher education.

It seems that the majority of the educational institutions try to create the new education and training system by keeping as much part of the old organisational structures and hierarchies as possible. The newly implemented bachelor degrees are orientated to the academic skills rather than to the practical knowledge. In so far, the implementation of the goals of the Bologna Declaration failed and one of the most important social risks of the new system is how the labour market will deal with a mass of fresh graduates having a Bachelor degree without any practice-orientated training. The results of a recent Hungarian research on the mismatch between the universities’ knowledge supply and the labour market demands carried out by Szalavetz [2008] illustrate well the lack of practice-oriented knowledge concerning the newly recruited labour force. It seems that the Bologna process will not provide solutions for this problem in Hungary. The higher education will be further more mainly oriented to science and not to the demand of the economy. This results in a growing gap between the demand of the labour market represented by the private and public companies and the supply side of the HE system. It is challenging research question how these former actors will provide the skills that are necessary for their everyday operation at the level of the labour process. Some stakeholders argued that the Hungarian companies significantly differ from each other in their knowledge demand as well as in the ways they satisfy this demand.

The inconsistency between the strategic and the instrumental goals, the lack of central legislation and of the involvement of the social partners into the creation of the two-cycle system led to a large number of specified programmes. As a non-intended result a very rigid undergraduate system was created with a large number of over-specialised programmes, which makes difficult the students’ mobility and, as a non-intended effect, contradict to the original strategic aim of Bologna Declaration.

Within the Hungarian Bologna-process, there are hardly any attempts or initiatives aimed to develop closer cooperation with the business or public communities. In this respect we intend to
call attention those innovative programs, which have an ambition to improve the networking among various stakeholders. For example, the so-called “Peer Learning Activity” (PLA), in which at least ten EU countries participating represents a possible “benchmarking” or “best-practice” in this field. There have been the following three PLAs organised so far:

(1) University-Business partnership. The aim of this PLA was to strengthen the connections between universities and the business sphere. The workshop concluded the there is a strong need to restructure/reform the university governance practices.

(2) Using financial instruments for steering system performance (in Higher Education). The workshop focused on three basic forms of university financing:

a) normative financing, which provides stability for the institutions, but does not deal with the differences in the university performances.

b) financing by agreements, which is not effective without special incentives that are harmonised with the different institutional priorities.

c) project financing, which is only effective if there are additional resources available and it requires special control mechanisms.

(3) Planning and Implementing Curricular Innovation: Structure, Content and Incentives. The workshop results were the followings: there is a need for the flexible curricula, which are better connected to the real labour market requirements creating relevant “competence-mix”. In order to ensure more effective teaching content university autonomy has to be strengthened along with development of quality standards, performance evaluation and the involvement of non-academic actors in the design of curricula.

The reform in turn of the Bologna process was initiated by the governments but the effective implementation was delegated to the different actors of the HE system without involving other social actors (enterprises, trade unions, etc). The goals laid down in the Bologna-declaration have taken place in Hungary in a rather contradictory way. The structural reform is considered to be unprepared and unfounded. This is reflected in the phenomenon that the strategic and instrumental goals of the process were weak integrated. The emphasis has been put on the technically feasible elements of the restructuring: introducing the credit system and the two-cycle education model with a relatively little respect to the content of the changes. The creation of the content and structure of the new curricula was delegated to the universities and polytechnics without involving other social actors.

The problems of inconsistency can be good illustrated by the problem of quality assurance. ‘Quality’ is perceived as a core element of the structural changes, hence the systematic introduction of a quality assurance system failed. There are only few institutions where specific quality management system (e.g. TQM) has been introduced, depending on the capacities of the
university management. The Hungarian Accreditation Committee (HAC), which was established in 1993 in order to accredit higher education institutions, evaluates the quality of knowledge. However the functioning of this committee is contradictory. According to the sceptics the HAC is dominated by the most powerful actors of the Hungarian HE system, therefore it represents only their particular interests.

It seems that the majority of the educational institutions in Hungary try to create the new education and training system by keeping as much part of the old organisational structures and hierarchies as possible. The newly implemented bachelor degrees are orientated to the academic skills rather than to the practical knowledge. Dominant opinion among the stakeholders interviewed is that the implementation of the goals of the Bologna Declaration failed and one of the most important social risks of the new system is how the labour market will deal with a mass of fresh graduates having a Bachelor degree without any practice-orientated training.

This orientation of the bachelor degrees to academic skills instead of practical knowledge is problematic in the new design of the Hungarian curricula. In answer to the problem of massification and quantitative mismatch of supply and demand in the graduate labour market, the Hungarian Bologna reform established that only 20% of the bachelor graduates could go to a Master program. In so far, it seems contradictory that the labour marker relevance of the bachelors has been only a secondary issue in the reform process. But this is due to the fact, that the reform process was focused principally on the structural aspect negligent in certain way the content aspect of such a reform process.

The Hungarian HE is rather similar to a centralised education model: the polytechnics and universities were clearly distinguished, the former was very much academy-orientated and emphasized explicit-type of knowledge, the latter focused much on practice-related teaching often in cooperation with one or more companies; the number of students was defined centrally, etc. The massification process has slightly modified this model because almost all polytechnics wanted to become a university. This is because of financial reason: the biggest proportion of the HE institutions’ revenue is coming from the state and is based on the number of students; therefore, if the polytechnics wanted to develop they had to increase the number of their departments and their degrees as well. The implementation of the Bologna process is embedded in this context and this favours the teaching of academic skills at the expense of practical training.

Setenyi [2009] resumes the intended and unintended effects of the Bologna reform process on the Hungarian higher education system: The first bachelor graduate will be leave the system in 2009, but the route to Master degree studies is still not established. The polytechnics and university bachelor will have the same consideration. However, the polytechnics are strong in the area of bachelor degree, but weak in the Masters programmes, which probably will conduce
The social function of higher education in the social models of the European knowledge society

to new university-polytechnic coalitions. On the other side, there are some unintended consequences as the broking of the homogeneity of the higher education institutions through development of different institutional strategies in the course of the reform process. In so far, a homogeneous national system of higher education doesn’t exist anymore in spite of that the national administration still regulated the whole system in a unified way.

Lifelong learning and didactical innovation in HE

Under the perspective of the employability, there is a consense in the Hungarian higher education system that the implementation of the Bologna process should lead to a closer adaptation of the HE system to the demands of the labour market. But it seems not clear, what consequences has this re-orientation of the higher education on the teaching methodology. The Reform process is focused on teaching time, money, positions and academic hierarchy. Contents and competence outputs were almost separately defined [see Setenyi 2009 Barcelona presentation].

Due to the institutional heritage of the Hungarian HE system, there is some inconsistency in the proportion of the academic and practice-orientated trainings. In the former system of Hungarian higher education which was based on the “Prussian traditions”, it was exactly prescribed what kind of courses have to be learnt to each diploma, what kind of exams have to be passed (to a credit level), etc. In contrast, the new system focuses only on the output side, i.e. what kind of competencies are necessary to obtain a given diploma and the question of how can them be achieved has to be solved by the polytechnics and universities themselves.

One of the most important changes in the Hungarian HE system in the last 18 years is its massification. On the one hand, this is undoubtly a positive phenomenon promoting social cohesion and mobility. However, on the other hand, it is a major challenge because neither the the general quality of the teaching infrastructure (including the number of training staff), nor a modification of the teaching methodology followed this dramatic change. In a sense, the higher education became accessible for a significantly larger proportion of the population, but – because the methodology of the teaching remained unchanged – this led to an underevaluation of the diplomas. The implementation of the Bologna process is a rather new phenomenon, so it would be too early to evaluate it but in the light of the stakeholders’ interviews it seems to us that its major challenge is not just the paradigmatic change from education to learning but rather the shift from a dual HE system to a linear one. It is therefore the content of bachelor and master training and the new roles of universities and polytechnics which are at stake.

However, the massification process had several negative effects on the teaching quality in higher education:
1. The increase of the number of students was not accompanied by the necessary growth in human, financial and infrastructural resources. That is, the Hungarian teachers have the heaviest workload in Europe and since the collapse of the state-socialist political-economic regime the teacher/student ratio has been tripled [Pusztai, G. 2007: 7-8].

2. Teaching technology was consistent with the characteristics of an elitist higher education system where only 10% of the population could participate in the courses offered by polytechnics and universities. The shift from this elitist to a mass-education was not followed by an appropriate transformation of the pedagogical methodology.

The Bologna reform process doesn’t provide solution for these problems as it is strongly focused on the structural aspect putting the contents issues in the background.

One measure to nearer higher education to the labour market is the development of lifelong learning strategies. The institutional setting of the Hungarian education and training system was not able to participate in the life-long learning. Europe-wide statistics such as Labour Force Survey call the attention to the relatively low share of the Hungarian adult population participating in education and training. Unfortunately, there are no reliable quantitative data on the social structure and the motivation of those who are participating in the LLL. According to the opinion of the stakeholders, the proportion of the graduates aiming to obtain a second degree is relatively high, which is a positive sign even though it includes mainly the middle and upper-middle classes. On the other hand, the formal lifelong learning offers for the Hungarian employees to update their knowledge, skills and competence are insufficient. This is partly due to the fact that the firms employing them do not pay for such kind of trainings, partly because the higher education institutions do not offer such kind of trainings. These two things go hand in hand. Another interesting characteristic of the life-long learning is that women are more deeply involved in it than men.

<table>
<thead>
<tr>
<th>Table 18: Adult participation in Life-long learning by gender in Hungary</th>
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<tbody>
<tr>
<td>(% of the adult population aged 25 to 64 participating in education and training)</td>
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<td></td>
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<tr>
<td>Hungary</td>
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<tr>
<td>Females</td>
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<td>Males</td>
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<td>EU -27</td>
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<td>Females</td>
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<td>Males</td>
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Source: European Labour Force Survey (LFS)[2007], Table 4, is revised version of the original Table.

These circumstances reinforce the assumption that one of the biggest social risks in Hungary is the abstention of a large mass of the Hungarian economically active population from the life-long learning. Europe-wide statistics such as Labour Force Survey call the attention to the relatively low share of the Hungarian adult population participating in education and training. In
2006 only 6.1% of the adult population participated in any form of life-long learning, which data lags behind the EU-27 average of 9.6%. In spite of the institutional variety and richness of the Hungarian higher educational system, this institutional setting was not able to participate in the life-long learning. The exposed data reinforce the assumption of experts according to whom one of the biggest social risks in Hungary is the abstention of a large mass of the Hungarian economically active population from the life-long learning. The problem is that there is a significant number of Hungarian employees whose knowledge is obsolete and there are no training courses for them.

On the other side, attention can be called to those innovative programs, which have an ambition to improve the networking among various stakeholders. One of these attempts is the so-called “Peer Learning Activity” (PLA), in which at least ten EU countries participate. There have been the following three PLA workshops organised so far:

(1) University-Business partnership. The aim of this PLA was to strengthen the connections between universities and the business community.

(2) Using financial instruments for evaluating the performance of the HE system. The workshop focused on three basic methods of university financing:

   a, normative financing, which provides stability for the institutions, but inefficient in dealing with the differences in the university performances.

   b, financing by agreements, which is not effective without special incentives that are harmonised with the various institutional priorities.

   c, project financing, which is only effective if there are additional resources available and it requires special control mechanisms.

(3) Planning and Implementing Curricular Innovation: Structure, Content and Incentives. This workshop addressed the following issues to the stakeholders: there is a need for the flexible curricula, which are better connected to the real labour market requirements creating relevant “competence-mix”. In order to ensure more effective teaching content university autonomy has to be strengthened along with development of quality standards, performance evaluation and the involvement of non-academic actors in the design of curricula.
Italy

<table>
<thead>
<tr>
<th>Welfare regime</th>
<th>Mediterranean regime (Italy)</th>
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<tr>
<td>VoC</td>
<td>Active population:</td>
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<td></td>
<td>a) Pertaining to the vocationalised countries</td>
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<tr>
<td></td>
<td>b) Pertaining to the country group with a low but increasing rate of high qualified, a high rate of qualified and a high rate of low qualified work active population.</td>
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<tr>
<td>ISCED 0_2:</td>
<td>39,3% (-5,9% from 2000 to 2007)</td>
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<tr>
<td>ISCED 3_4:</td>
<td>45,0% (+2,8%)</td>
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<tr>
<td>ISCED 5_6:</td>
<td>15,7% (+4,3%)</td>
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<tr>
<td>Higher education pupils:</td>
<td></td>
</tr>
<tr>
<td>18.2% of all pupils and students (+1,5% from 2000 to 2005)</td>
<td></td>
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<tr>
<td>11,3% gross enrolment rate in respect to 18-39 cohort (+1,8)</td>
<td></td>
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<tr>
<td>From elite higher education to mass higher education.</td>
<td></td>
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<tr>
<td>Occupational groups by highest education level:</td>
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<tr>
<td>- Pertaining to the country group, which shows a high rate of qualified workers in all occupational groups except in the categories 6_9, accompanied with a medium rate of graduate workers only in the categories of knowledge workers (ISCED2_3). In all other categories, the rate of high-qualified workers is low, including the ISCED 1 category</td>
<td></td>
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<tr>
<td>- High-qualified workers concentrated in the ISCO level 2_3. Here the rate of high-qualified workers is 39%, and has increased 3% point from 2000 to 2007. The level of qualified workers is at 53% decreased in the same period 3%-points</td>
<td></td>
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<tr>
<td>- The rate of high-qualified workers in this occupational category 1 is at 15% in the year 2007 and has decreased 4%-points from 2000-2007. In parallel, the rate of qualified workers has decreased from 49% to 46%.</td>
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<tr>
<td>- The rate of high-qualified workers has increased in all categories except the category of manual work (ISCO6-8).</td>
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<tr>
<td>Economic Structure (in % of GDP</td>
<td></td>
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<tr>
<td>Agriculture etc: 2,2%</td>
<td></td>
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<tr>
<td>Industry (excl.construction 26,9%)</td>
<td></td>
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<tr>
<td>Service Sector: 70,9% (Private 50,0; Public include. Social Serv. 20,9)</td>
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</table>
On the Italian discourse about higher education dominate two aspects. On the one side, the precarisation of the graduate labour market similar to the general labour market. Together with other Mediterranean welfare regime countries, Italy is an example of the lowering of working standards in the graduate labour market in terms of employment rate and working conditions. This conduced to problematize the transition phase from education to work.

Connect to this problem; the Italian debate is focused on the need to nearer the higher education to the labour market improving the employability of the new graduate workers. In this respect, some innovative initiative has been taken as the higher level apprenticeship [Spantini 2009: Barcelona presentation], which, however, hasn’t improve until now the situation of young workers in the Italian graduate labour market.

**Social Dimension**

The social system in Italy is currently pressed by old and new serious problems. On the side of the 'old', persistent, problems, there are two major ones: the historical breach between northern and southern part of Italy and the difficulty of the youngest to exit from their own family, gaining autonomy. On the side of the 'new' criticalities, salaries and immigration must be mentioned. However, here it isn’t the place to discuss the huge problem of social inequality. Focusing on the emerging social risks connected with school-to-work transition allows to describe the social dimension according to the three aspects identified by Taylor-Gooby [2004]: i) entering the labour market; ii) maintaining stable, secure and reasonably well-paid employment; iii) gaining adequate training.

One year after the degree, first level graduates have a 45% occupational share - 9 percentage points less than pre-reform graduates. In parallel, there's a much higher than expected share (64%) of first-level graduates who decide to continue their study, with a consistent share (over 30%) motivating their choice on the feeling that their certificate is insufficient to get a job (see figures below).

The entrance in the labour market in Italy has been recently reformed in year 2003 (Legge 30/2003; Ministerial Decree 276/2003). The main objective of the reform was to improve national occupational levels, mainly by introducing more flexibility in employment contracts.\(^{104}\) The so-called 'Legge Biagi' involved two main interventions: the introduction of new 'flexible' contracts (staff leasing, job on call, job sharing, etc.), and the reform of employment services, with the end of public monopoly in job placement.

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\(^{104}\) A certain degree of flexibility in labour contracts was already anticipated in 1997 with the 'Legge Treu' (196/97), which introduced temporary help work, incentives for part-time contracts, working grants, and the reform of apprenticeship and vocational training.
Having improved job precariousness to a great extent, the labour market reform has worsened job conditions for graduates. As a consequence, Italian young graduates still find a job later than the EU average, earn less, and have more chances to be unemployed or to find a temporary position \(^{105}\) instead of a permanent one [Livi Bacci, 2005].

On overall, occupational stability is more and more difficult to be reached both when measured one year and five years from the degree. In 2004 the 40% of those with a first level degree and an occupation had a permanent position, in 2005 there was a sensible drop, with only 32% with a permanent job. One year after the degree, the number of permanent jobs dropped from 34% in 2001 to 26% in 2006. Architects, engineers, chemists, agricultural experts, pharmacists, physicians, and lawyers are those who have more chances to find a permanent job. Precariousness affects younger researchers too, as the following results from Brandi [2006] show. A researcher may wait five years to be stabilised. 60% of the cases detain an intermediate-term labour contract (2-3 years), while 32,3% take advantage of short-term contracts (one year or less). Only a minority (7,7%) exceeds 3 years contracts. \(^{106}\) Such persisting instability deeply affects private life. \(^{107}\) Emotional stress emerges in 97,4% of cases and almost 60% think this situation has bad influence on their job. Almost all interviewees (96,6%) denounce negative effects: 71,6% on their couple relation, 89,7% on their capacity to face unforeseen events and 95,6% also on other aspects of private life. Women are the most exposed, having shorter contracts; longer periods of precariousness, and declaring higher stress levels. Precariousness deeply affects the teaching staff too: every three permanent teaching positions, two are temporary contracts. Many degree courses have been open with a ridiculous percentage of permanent teachers, hiring a lot of external, part-time teachers, and thus lowering the overall quality of services provided by Universities. On the side of wages, a recent research underlines the fact that, in the last five years the purchasing power in Italy has decreased of 1.900 Euros. \(^{108}\)

**Structural reforms**

A high performing HE would facilitate and shorten the school-to-work-transition, which, in turn, would have positive effects on social inclusion. However, given the economical context

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\(^{105}\) Although in year 2006 the occupational level in Italy raised of one percent point, and the forecasts for year 2007 seem to confirm the same positive trend, the trend in the labour market clearly goes for a continuous decrease of permanent jobs: 2004: 58,4%; 2005: 50%; 2006: 46,3%; 2007 (forecast): 45,4%.

\(^{106}\) The most influential factors on contract renewal are predominantly the support of group co-ordinator (78,3%) and then scientific qualifications (only 15,8%).

\(^{107}\) Despite such a difficult context, researchers’ scientific productivity seems anyhow not to be negatively affected. The scientific output of the sample is high, confirming that it possibly depends on competencies and team strength and not on labour relation stability.

\(^{108}\) Young people from 15 to 24 years old earn 736 Euros per month on average and the situation is even worst in the southern of Italy: southern graduates under 30 with 3-5 years of working experience lost the 22,5% of their purchasing power in 5 years, while northern colleagues lost only about the 10%.
and the changes of the labour market, such a task has become extremely complex. The Bologna reform process was taken as a possibility to increment the autonomy of the HE-institutions and to reduce the degree of centralisation, to increment the diversity of degrees and to achieve their greater labour market relevance [Naro 2009: Barcelona presentation]

Italy was one of the 4 countries, which have given the initial impulse to the Bologna process through the Sorbonne declaration. It has also one of the countries, which have first started with the national reform process to adapt its higher education system. The Ministerial Decree n° 509 of the 3rd November 1999 reformed the university system so as to meet the objectives of the 'Bologna process' 109. In the previous system university studies were organised as follows (www.miur.it/guida/guide.htm): i) first level courses (three years) leading to a first degree called Diploma Universitario with an entrance requirement of school leaving qualification (Diploma dell’Esame di Stato and also known as Maturità); ii) second level courses (four to five years with medicine lasting 6 years) leading to the Laurea degree; iii) third level programmes leading to a research doctorate (Dottorato di Ricerca) or to a specialisation degree (Diploma di Specializzazione/Specialista) with an entrance requirement of the Laurea. After the reform, the university system has been re-organised in three cycles. The reform has abolished the old three year degree (Diploma universitario) and the four year degree (Laurea), introducing the following new academic qualifications organised in three cycles (the new, so called, '3+2' system): i) first cycle: First level degree (Laurea); ii) second cycle: Second level degree (Laurea Specialistica or Master universitario di 1° livello); iii) third cycle: Postgraduate studies (Dottorato di ricerca or Diploma di specializzazione or Master universitario di 2° livello). Exceptions to this 3+2-modell are the medicine with a unique cycle of 2 years with an additional post-graduate specialisation, pharmacy, veterinary science, architecture and law with an unique cycle of 5 years. In 2007, only 22,9 of the graduates are still under the old regime [Sgarzi 2009: Barcelona presentation].

This and other reforms of the University have gone in the direction of restructuring curricula to better match the needs of the labour market. Even if the matching of education and employability is probably deemed to remain a utopian challenge, one could always think that curricula more precisely targeted to labour market needs could eventually result in finding, if not more, at least better jobs. "In theory, the knowledge economy should be able to offer better jobs which have the potential to be more fulfilling [...] In practice however this is not always the case. Even in the best performing areas of the EU, substantial proportions of workers in the knowledge based occupations 110 report a lack of access to training and career advancement as

109 The new system was fully activated in the academic year 2001/02.
110 Which, according to the authors of the enquiry, sum up to a 37% in Europe.
well as a mismatch between the demands of the job and the skills they have [...] Not even half of all knowledge workers seem to believe that they have a good work-life balance” [Rüdiger and McVerry, 2007]. The 3+2 system has not yet been fully deployed/received by Italian employers. The shorter permanence in the HE system is perceived as an insufficient qualification. Italian young graduates still find a job later than the EU average, earn less, and have more chances to be unemployed or to find a temporary position\(^{111}\) instead of a permanent one [Livi Bacci, 2005]. The closure and the deregulation (precarisation) of the labour market have created difficult conditions for graduates.

To improve the situation, three actions are suggested. First, bachelor degrees should be better fine-tuned. It is the impression of the interviewees that the first cycle curricula have been defined as preparation courses for the next educational step (biennial degree) instead of having a professional valence by themselves. The value of bachelors should be better communicated to both students and employers.

Different evidences indicate that, despite some positive effects of the recent HE reforms, social inclusion is not improving in Italy. First, social inequalities have deepened, with a growing difference between the 10% richer and the 10% poorer part of the population. For instance, salaries of managers compared to low-level employees raised from a ratio of 3:1 to a ratio of 4:1. Employers and autonomous workers have seen their salaries raising of about 12.00 Euros, whilst employees and factory workers have seen a significant decrement (3.000 and 1.600 Euros less on average respectively). 7.3 million of workers in Italy earn less than 1.000 Euros, 14 million less than 1.300. The share of workers who find an underqualified job is growing: 3.7 million of workers fail in finding an occupation aligned with their studies, and many of them are university graduates [Istat, 2006].

Job precarisation has had the effect to extend the dependence of young people from their families\(^{112}\), thus delaying the entrance of young graduates in the marketplace and the family continuing to remain the only shelter.\(^{113}\) The fact that the younger have many difficulties in exiting their families delays independence and undertaking of real life responsibilities. The reasons for such behaviour are both cultural and economical. A nice example in which cultural and economical factors are intertwined is the scarce attitude to go for house rentals. Italy is in the last places of the ranking of house rentals, with only the 18.8% of the population living in a

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\(^{111}\) Although in year 2006 the occupational level in Italy raised of one percent point, and the forecasts for year 2007 seem to confirm the same positive trend, the trend in the labour market clearly goes for a continuous decrease of permanent jobs: 2004: 58.4%; 2005: 50%; 2006: 46.3%; 2007 (forecast): 45.4%.

\(^{112}\) The economical status of young Italian people is comparable to that of their European colleagues, mainly because of the money that is provided by their parents (out of a total of 100 Euros, young Italian people of 15-25 years old receive 74 Euros from their families, against an European average of 52) (Livi Bacci, 2005).

\(^{113}\) Between 25 and 30 years old, the 68% of men live with the family (24% in Germany, 18% in France; 13% in England). Italian women still living with parents: 46% (19% in France; 10% in Germany; 6% in England).
rented house, with more that the ¾ living in a property house. Such shares demonstrate the widespread expectation of living the family house only when having the perspective of buying an own one. Additionally, whilst in the majority of EU Countries wages have raised in the last years, the salaries in Italy haven't. Job insecurity, the general decrease in entry wages and high costs of housing, which contribute to the permanence in the family setting, don't let young people neither to develop the network of relations that is essential to find a job, nor to exchange experiences and develop self-initiative. Given that the cost of houses recently raised exponentially and that Italy has one of the lower shares of subsidized housing, it seems that, without a change of the mindset, the quest for independence and autonomy of the younger in Italy will even be more difficult in the near future.

The 3+2 system has not yet been fully deployed/received by Italian employers. The shorter permanence in the HE system is perceived as an insufficient qualification, which is not balanced (sometimes even worsened) by the younger age of the applicants. There is evidence that, to some extent, Italian companies prefer to hire young people with a diploma or people with a master degree. Even worse, many professional bodies still require a five-year degree to subscribe new members. Moreover, the industrial system in Italy seems to continue to ignore the importance of research: while in other industrial countries the private expenditure in R&D has raised in the last ten years from 66,7% to 67,9%, in Italy it has lowered from 53,4% to 47,3%. At the same time, while the number of researchers employed in companies has grown from 5 to 6,3 in the OCSE Countries, in Italy it dropped from 1,7 (1995) to 1,5 (2003).

The 53% of researchers are employed in companies with more than 1,000 employees, while less than 8% is employed in companies with less than 50 employees. These last figures are even worst when one considers that from years to years in Italy employment in big companies has lowered down, with the new jobs being primarily offered by small companies.

**Lifelong learning and didactical Innovation in HE**

At the end of the nineties, Italy was at the end of the ranking for lifelong learning initiatives. Only ¼ of private sector companies offered some courses, against an EU average of 62%, and only 1/5 of the overall working population attended to some training and education, against a

114 For a comparison, in Germany the 57% of the population rents the house, in France 40,7%, 29,3% in the UK. Only Ireland and Spain have lower shares than Italy. The average wage of a 'single' is 16,400 Euros, more or less the same as in 1996. In UK, The Netherlands and France, in the same period, wages raised of 24%, on average. Couples with two children have seen their salaries growing of a ridiculous 3,4%, to be compared with the 33,5 of Ireland (top scorer), 22,7 of France, 22,5 of UK, and 13,1 of Germany.

115 Only Ireland and Spain have lower shares than Italy.

116 In Italy, which is characterised by an absolute majority of small companies, the recruitment mostly takes place by word-of-mouth and through social networks (Ministero del Lavoro, Sistema Informativo Excelsior - elaborazione dati Unioncamere, 2005).
EU 40% average. In the last years, the situation has not changed too much, with only the 6.8% of adults attending to lifelong learning initiatives, against a EU 25 average of 9.9%. To reach the Lisbon target of 12.5%, it will be necessary to involve other four million of adults. The sole exception to such a negative trend is the one of large companies, which has increased the offer of lifelong learning going from a 58% to a 73% share. The companies offering more training are located in the northern part of Italy, and operate in the sector of services. Manufacturing and the southern regions are the contexts with the lowest levels of training.

LLL continues to lay behind the desired targets, enforcing social inequalities. The typical individual, who attends continuous training and educational courses in Italy, is a male between 26 and 40 years old, with a job and a diploma. The attendance to LLL initiatives is strongly correlated to workers' educational level, and to workers' position in the organizational hierarchy, with the higher positioned (managers) showing the highest attendance (54.7%) and distancing shop-floor workers of a striking 38 percent. In practice, such a situation means that training and education in Italy work just for those who already have had some, enforcing the social exclusion loop. Women and elderly are severely penalized. Less than 10% of those who undertake some training are more than 50 years old. Those who do not have any school degree and the less favoured have almost no chances to enter (or re-enter) any educational path. Only the 6.2% of people aged 25-64 (that is those people who should theoretically be active on the labour marketplace) attends to LLL initiatives, a share that is well below the EU 25 10.8% benchmark [Eurostat, 2005]. The access to LLL in Italy thus seems more and more restricted to the 'strong' portion of the population, with the progressive marginalization of the weak segments (young workers, temporary employed; low qualified; over 45; etc.). A major drawback of LLL collective actions lies in the scarce information and knowledge that companies have of the available funding schemes (which reflect an insufficient attention/interest in LLL and result in the under exploitation of LLL opportunities). Different issues that have the potential to seriously slow down LLL modernization in Italy has to be resolved. First of all, the attitude to provide new instruments without foreseeing the process through which such new opportunities will be effectively implemented. The most relevant evidence lies in the fact that, despite the many LLL initiatives that are taking place at the Country level, very little effort is provided to support necessary and preliminary careful actions focussed on the analysis of competency lacks and

117 34.7% in Sweden, 29% in UK, 27.6% in Denmark.
118 The 43.6% of those working in big companies undergo some training, while the same happen for just the 15.5% of those working in small firms.
119 Lifelong learning for those over 45 years old does increase only for people in high managerial positions, while for the others it remains a 10% lower than those under 45
120 The target set by the Lisbon Conference in this respect would be to reach the 12.5% by 2010.
Second, most of the innovations (especially those in the HE sector) are strongly encouraged but are not coupled with dedicated funding. Third, the growing number of agencies and instruments seem to be launched with a scarce high-level coordination, a fact that is worsened by an insufficient capacity of communicating the new opportunities to citizens and companies. Finally, more attention should be put on LLL 'accompanying measures', such as wider communication and information; analysis of competency lacks and educational career planning; improved coordination among public and private bodies; monitoring and assessment of experimental initiatives; adequate funding.

Universities should play a much more relevant role in the promotion of LLL initiatives. Recently, a LLL guideline document has been issued. Such document represents a serious commitment to the modernisation of the Italian University in the direction of an adult-centred modularization targeted to provide a wealth of easy-to-access, high-level courses. However, such initiative is just in its infancy and only its initial experimentation will demonstrate its effectiveness. The positive trend of attracting adults in tertiary education, thus promoting lifelong learning, should be further encouraged, e.g. implementing distance learning degree courses. Third, the burden of employability shouldn't be put solely on HE. Employers should have been given a role too. For example, extra-curricular courses targeted to the acquisition of specific competencies could be defined in partnership and partially funded by companies. Finally, wider policies aimed to introduce flexicurity schemes and correct the recent trend in the dynamic of wages are needed too.

Recently (late 2007) the MIUR (Ministry of Education, University and Research) issued a document that directly addresses the issue of HE for LLL. The guidelines recognise the fact that adult LLL has to become the new 'mission' of Italian Universities. The main measure foreseen to reach such goal is the constitution of Permanent Learning Centres (CAP - Centri per l'Apprendimento Permanente). Such CAPs should be organized to become high-level LLL reference providers with respect to both Universities geographical district and distinctive subject matters. The guidelines identify three distinct CAP functions/services:

i) the acknowledgement and certification of experiences and competencies that have been acquired in formal and informal contexts;

ii) the development of more flexible and competency-oriented University courses, which should be more easily adapted to the needs of the adult population, e.g. through the

The recent (late 2007) DDL "Norms for LLL" seems to acknowledge the aforementioned weaknesses, in that it strongly encourage "the development of services that support people in the definition of their own formal and informal learning path, with a specific attention to the identification of one's competency gaps and needs, which shouldn't be unrelated with the needs of the labour market and of one's reference territory". However, no dedicated funding are allocated to implement the directive (see further in the main text).
provision of e-learning courses and of shortened courses (Permanent Learning Modules - MAP);

iii) the strengthening of the links between Universities, public (e.g. CTP) and private bodies through joint initiatives, such as stages, partnerships, work-based learning actions, and mixed educational curricula (IFTS, Masters).

Another intended goal for the CAPs will be to rescue those adult students who have interrupted their curriculum studiorum without getting a degree.

The state-of-the-art of the Italian LLL system shows many delays and some innovations that seems to have good chances to recover some historical gaps and concur to fulfil Lisbon and other EU-issued targets. On overall, the awareness of the main EU policies concerned with LLL is widespread, and the intention to update the national system at a central, local and HE level is instantiated by a number of actions and ongoing experimentations.

However, there seem to be some unresolved issues that have the potential to seriously slow down LLL modernization in Italy. First of all, the attitude to provide new instruments without foreseeing the process through which such new opportunities will be effectively implemented. The most relevant evidence lies in the fact that, despite the many LLL initiatives that are taking place at the Country level, very little effort is provided to support necessary and preliminary careful actions focussed on the analysis of competency lacks and educational career planning.122 Secondly, most of the innovations (especially those in the HE sector) are strongly encouraged but are not coupled with dedicated funding. Finally, the growing number of agencies and instruments seem to be launched with a scarce high-level coordination, a fact that is worsened by an insufficient capacity of communicating the new opportunities to citizens and companies.

All of the aforementioned issues generate the overall feeling that, at least at the level of the higher national governing bodies, changes and innovations are more defined to comply with, and because of external (that is, EU) recommendations than as an intrinsic and necessary move for country's welfare. In the future, more attention should be put on LLL 'accompanying measures', such as wider communication and information; analysis of competency lacks and educational career planning; improved coordination among public and private bodies; monitoring and assessment of experimental initiatives; adequate funding.

In the area of didactical innovation, the initiative apprenticeship in higher education can be mentioned within the reform process towards the implementation of a 3+2 system. This policy

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was lanced in 2003 to reduce the age of labour market entrance of young graduates, to improve the employability linking education and employment and to reduce so the youth unemployment rate. The higher-level apprenticeships are based on contracts and are framed in a process to obtain a higher education certificate. It is based on the alternancy between on and off the job training and includes courses at higher education institutes, individual studies, formal and informal on the job training and work experience.

The higher-level apprenticeships are legally regulated. It application is restricted to persons aged between 18 and 29 years but all economic sectors. The application can be fine-tuned by regional legislation. It is based on regional agreements among regions, trade unions, business organisations, universities and other higher education institutes. The individual contract fixed the work to be carried out, as well as the individual training plan and the qualification to be obtained at the end of the contract. At the end of the apprenticeship contract, it turns into an open-end work contract except in cases of dismissals. However, there are strict condition to effect dismissals during the apprenticeships. The higher-level apprenticeship program is still in an experimental phase with applications in regions like Bolzano and Emilia Romagna. In spite of its limited application, the programme seems to be successful, but it requires still a detailed analysis of the continuity of employment once finalised the contracts. On the other side, the regions as well as the social partners and higher education institutes haven’t fully accepted this initiative due to a lack of cultural preparation and there is only a limited debate about the higher-level apprenticeships [see Spattini 2009: Barcelona presentation].
## Netherlands

<table>
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<tr>
<th>Welfare regime</th>
<th>Socialdemocratic or hybrid regime (Netherlands)</th>
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### Varieties of Capitalism

#### Learning Regimes

**Active population:**

- a) Pertaining to the high qualified countries
- b) Pertaining to the country group with a high and increasing rate of high qualified, a high but decreasing rate of qualified and a medium rate of low qualified work active population.

**ISCED 0–2:** 25.6% (-5.1% from 2000 to 2007)

**ISCED 3–4:** 43.4% (-1.2%)

**ISCED 5–6:** 30.0% (+5.9%)

#### Higher education pupils:

- 15.5% of all pupils and students (+1.8% from 2000 to 2005)
- 11.6% gross enrolment rate in respect to 18-39 cohort (+2.1)

From elite higher education to mass higher education.

#### Occupational groups by highest education level:

- Pertaining to the country group, which shows a high rate of qualified workers in all occupational groups. Only in the category of knowledge worker, the rate of high-qualified workers and in the category of low qualification work places the rate of low qualified workers are higher
- High-qualified workers concentrated in the ISCO level 2–3. Here the rate of high-qualified workers is 58%, and has increased 8% point from 2000 to 2007. The level of qualified workers is at 35% decreasing in the same period 7%-points
- The rate of high-qualified workers in this occupational category 1 is at 39% in the year 2007 and has increased 9%-points from 2000-2007. In parallel, the rate of qualified workers has decreased from 49% to 44%.
- The rate of high-qualified workers has increased in all categories including the category of occupations without qualification.

### Economic Structure (in % of GDP and...)

- Agriculture etc: 2.1% (GDP)
- Industry (excl.construction) 24.2% (GDP)
- Service Sector: 73.8% (Private 49.7; Public include. Social Serv. 24.1)
In the Dutch discourse on the reform of the social model, the improvement of the innovation capacity of the society is high ranked. The problem of the ‘innovation paradox’ is addressed as a key issue in the Dutch debate regarding the knowledge economy, and a number of problems observed as key social risks connected with the rise of a knowledge economy in the Netherlands: a) insufficient and unequal access to knowledge for certain groups; b) weak national commitment to lifelong learning; c) an increasing gap between low and high educated workers; and d) critical labour market transitions during the life course.

To overcome the innovation paradox, the reinforcement of the human factor is crucial. The capacity to social innovation is considered as the key to technological innovation. Innovations processes are at the same time learning processes. Innovation and work process learning are intertwined. In so far, lifelong learning is the key element for permanent innovation [see Leijnes: 2008: Budapest presentation].

Building better relationships between knowledge producers and knowledge users, strengthening human (educational) capital at all levels of the economy and increasing labour market flexibility through a reinforcement of employability of people during the life course, are key elements of the strategy to reform the social model.

Besides more stimuli for entrepreneurial behaviour, the reinforcement of the innovative capacity of society requires higher public investments in education, research and innovation are necessary means to reach this objective. Not only higher education should be stimulated, according to this agenda. Investments along the whole line of the educational infrastructure are needed to safeguard connection of all people with the rising knowledge society. Both highly educated knowledge workers as well as craftsmen and workers with medium and lower qualifications are pillars of a knowledge society, in the view of the IP and the SER.

The socioeconomic policies outlined above constitute an important background for the ongoing debate about adaptations in higher education and the social risks policies in the Netherlands. It must be underpinned, however, that the role of higher education in the actual society is dominated by the ‘innovation paradox’ e.g. the fact that the Dutch innovation system performs well with regard to the production of knowledge but lags behind when it comes to the application of knowledge in products, processes, companies and other user contexts. Social risks are debated to a much lesser degree. Observers perceive four major social risks connected with the rise of the G knowledge society:

a) Insufficient and unequal access to knowledge for certain groups;

b) Weak national commitment to lifelong learning;

c) An increasing gap between low and high educated workers;

d) Critical labour market transitions during the life course.
There still seems to be a broad consensus about the traditional task of the higher education system in preventing social inequality, although oppositional voices are heard that doubt if it should continue to fulfil this function in the future. Equality of chances is still the dominant principle. Access to higher education should be open to everybody, irrespective of origin, class, income, social position etc. The lack or neglect of attention for life long learning and employability in increasing flexible labour markets could be seen as new social risks in the G knowledge society. Therefore, it is relevant to search for attempts from within the system to mitigate these risks.

In this context, the views on higher education can be distinguished grossly speaking - and caricaturizing a bit – in two views. The first view pleads for more openness of the HE system towards economy and society, more interactions with the demand side e.g. the business community and greater accessibility for new ‘target groups’, at risk in the G knowledge society. This point of view can be found in segments of higher professional education, in particular in segments related to medium-tech sectors of the economy, dominated by small and medium sized companies characterized primarily by the application of well-developed technology. Practical knowledge and competence-based learning play a role in the debate about educational reform in these segments (cfr. interview Leijnse).

The second vision stresses the specific and distinguished character of the HE system. It is more satisfied with the actual performance of the system and puts more value on the systems’ internal processes than on interactions with the environment e.g. the business community. It opts for reinforcement of the already strong points of HE, a focus on fundamental research, more excellence in education and, in general, more selectivity in access to higher segments of the system (top academies, top masters). We find this vision in scientific education and research, in particular in segments that are closely related to internationally oriented fundamental research. In these segments the need for theoretical knowledge and academic learning are stressed in the debate.

The polytechnics are somewhat in between these typical positions. The polytechnics, especially their technology-driven segments, stress sound disciplinary scientific knowledge, but they also try to organize interactions between different academic disciplines and between science and agencies in the context of the application of science, like R&D-institutes, research laboratories and (large) companies. The need for theoretical as well as for more applied and practical knowledge are stressed in these contexts.
Social Dimension

A recent comparative study of the labour market position of graduates in higher education (HBO and WO) in the Netherlands compared with other EU countries sheds some light on the transition from education to employment and the early careers of graduates (ROA, 2007). Some results are:

1. Compared to graduates in other EU countries, labour market entrance of Dutch HE graduates is relatively easy. The vast majority of graduates from both the colleges for higher professional education and the universities found a job within 3 months after graduation.

2. However, the quality of these first jobs of the graduates stays somewhat behind EU averages. Dutch graduates had somewhat lower salaries. More often, they had jobs under their graduation level and part-time jobs. And far more often, they had temporary contracts.

3. During their early careers Dutch graduates proceed relatively better than graduates in other countries. After 5 years from graduation they were less unemployed. They had more income and earned above-average salaries. They had permanent jobs more often. But they still less had jobs corresponding with their type and level of qualification.

4. More than a half of the graduates got a job that can be typified as a ‘mass generalist’ job (f.i. commercial function). Another 20-25 percent got a job that can be typified as a ‘mass specialist’ job (f.i. teacher, nurse). Only one fifth of the master graduates got an ‘elite specialist’ job, like for instance medical specialist. Masters more often get an ‘elite generalist’ job, like for instance business manager.

With respect to these indicators, the position of higher educated persons is rather comparable to the position of graduates from medium level secondary VET, in particular in the technical disciplines. The labour market position of these two groups, however, is much better than that of graduates from lower level vocational education and secondary general education. The later groups stay unemployed for longer periods and get more precarious, less rewarding jobs.

The ROA-study also presents some data about the (mis)match between competences and job requirements of the graduates in their first jobs.

1. Almost 60% of the Dutch master graduates said that their competences were adequately used in their first job. However, 30% of the graduates also had the experience that they had not sufficient knowledge and skills to meet the requirements of the first job. This is a high percentage compared to the other countries in the study.

2. After 5 years, the situation has changed a bit. Now almost 80% of the graduates state that their competences are used adequately. But still 25% of the graduates says that their knowledge and skills are not sufficient to meet (new) job requirements.
3. One third of all graduates thinks their job provides good career opportunities. For the masters it is 40%. This is a lower percentage than in several other EU countries in the study.

4. A majority of 70% of the graduates is satisfied or even very satisfied with the job they actually have. This is on EU average.

5. Between 60 and 70% of the graduates states that their education has given them a good basis to start work, a good basis to execute their present job, a good basis for further training and a good basis for a future career.

In general, these data do not give a negative picture. They reveal some weaknesses, however. A substantial number of graduates experiences shortages of knowledge and skills in relation to requirements of work, in their first job and also at a later stage in their career. A majority of graduates - though satisfied with their present job - is not optimistic about opportunities to make a career. These data point to qualitative matching problems, at labour market entrance and during their further professional careers.

These problems were also signalled in interviews conducted for this study. Some experts see them as a consequence of the gap that still exists between the education system and the labour market e.g. the business community. Both systems operate according to different logics, both consist of powerful institutions, inclined to preserve and safeguard vested interests. It is not easy to establish interconnections in that context. Where interconnections and communication are lacking, mismatches easily can occur.

Increasing emphasize is put on the fact that graduation from higher education is not the end of the training trajectory of a student in higher education. In many cases, higher education only provides the initial basis upon which further training takes place in the private domain, at the job, under the responsibility of private companies. Many companies have their own internal labour markets with well-developed in-company training facilities to qualify talented employees for specific positions in the company. For instance: traineeships are very popular in large technical companies and public institutes. Such traineeships usually combine further theoretical courses with practical experience periods in various departments and positions at the company. Sometimes, international exchanges are included in the programmes. Usually, it takes several years to accomplish a traineeship. Traineeships are highly selective instruments. They presuppose an adequate general academic basis, upon which a reservoir of company-specific knowledge, experiences and attitudes can be build.

There is a difference perceived between the high-tech segment with the large companies, employing academic graduates, and the low-tech segment, with many small and medium sized companies, that primarily employ graduates of higher professional colleges. The former needs generally educated graduates, who can be ‘molded’ by specific further training within the
The social function of higher education in the social models of the European knowledge society

companies themselves. The later needs specifically qualified graduates, who can master in-company jobs and positions without much further training. Knowledge requirements in these companies are more specific. There are less internal training facilities available. There is perceived a need for adequate training provisions outside the educational system and better connections between these private provisions and initial higher education. That might prevent risks of obsoletion of knowledge of professional workers at the labour market, in labour organisations, in professional contexts. It is a challenge for social and educational policy to establish relationships to make these subsystems effectively work together.

**Structural reforms**

In the Netherlands, major elements of the Bologna declaration were incorporated in the HE system at a rather early state. Shortly after the declaration, the Law on Higher Education was adapted to introduce the Bachelor-Master structure, the ECTS based credit points system and the Diploma Supplement, describing learning outcomes and qualifications in a common EU standardized format. These changes covered the HE system as a whole. Both universities and professional HE institutes could apply the new BaMa-structure, and many institutes actually did so. Within a few years after the start in 2002-2003 more than 80% of all HE programmes were rearranged in the BaMa-structure, according to the progress report of the Ministry of Education. Bologna recommendations regarding quality management were all incorporated in the quality control procedures of the national accreditation body.

However, the early adoption of these elements does not mean that full transparency from an international perspective has been established already. According to promoters of the Bologna process, improvement is still needed with regard to issues like: a) procedures for admission of students from other EU countries; b) procedures for the evaluation of qualifications of foreign students; c) recognition and validation of qualifications attained outside educational contexts, for instance at work, in work experience periods; d) description of learning outcomes; in practice, HE institutes use various standards, in stead of the common standards of the diploma supplement format; e) the way study credit points are counted and related to students work loads; f) the relationship between credit points and competences, as defined for various parts of the study programmes. These issues are still debated in the Netherlands, actually.

Another point relates to the fact that the new structure was implemented within the existing Dutch binary HE system, with its separate segments for scientific and professional education. Formally, both types of educational institutions have introduced the bachelors and masters degrees but titles are not comparable and, in practice, transition from HBO to WO is difficult or not really possible, without extra transition courses. Although the Netherlands is ahead in the
EU as regards the implementation of the Bologna recommendations, this also hinders full transparency from an international point of view.

The Bologna based measures described above fitted well with the trends of deregulation, decentralisation and standardization, which were already visible in Dutch higher education. These trends are reflected also in the recent new Law on Higher Education. With the new law the government wants to increase the autonomy of the HE institutes, to strengthen influences from the market and the demand side (students, stakeholders) on educational programmes and to introduce new forms of governance, with new checks and balances within and around the institutes. The government withdraws from the primary process of education – this fully becomes the domain of the institutes themselves - while maintaining its responsibility for quality, accessibility and efficiency of the system.

Important components of the new law, relevant here, are the following:

- Increased autonomy for the HE institutes; the law becomes a kind of framework act, with a general obligation of good governance as regards education in stead of detailed regulations regarding primary processes and supportive management.

- More flexibility for institutes with regard to the development of study programmes; the focus of accreditation will shift from the level of ‘programmes’ to the broader level of ‘domains’, within which a greater variety of programmes is possible.

- More opportunities for students to develop tailored educational trajectories; it is still debated whether of not this should also be facilitated with a financial system of ‘learning rights’ for students.

- More facilities for life long learning, especially by introduction of better procedures for recognition and validation of non-formal learning.

- More opportunities for collaboration of institutes in different HE segments, for instance between WO and HBO and between public and commercial HE institutes.

- Extension of scientific research opportunities in institutes for higher professional education, with the focus on applied scientific research as distinguished from the free, fundamental scientific research at the universities.

- More opportunities for joint degrees, among Dutch institutes but also with institutes in other EU countries; the binary system will be continued, however.

- Better connections with stakeholders on the labour market and a better organization of consultation with the demand side (employers, professions, branches) as regards the actuality and quality of study programmes.
Coupled with greater autonomy: a greater focus on accountability of the institutes and on the monitoring of quality, especially with output indicators.

It is expected that in this way - through broader domains, flexible programmes, more choice opportunities for students, more autonomy of the institutes, opportunities for collaboration between institutes, a different system of governance – the student-centeredness of HE will be increased.

**Lifelong learning and didactical innovation in HE**

The introduction of more opportunities for lifelong learning has been promoted by social and economic policy actors in several recent advices to the government regarding the role and reform of higher education in the light of the rising knowledge society. The Innovation Platform - a national expert think thank on innovation – elaborated several concrete proposals to stimulate lifelong learning in a strategic Knowledge Investment Agenda 2006-2016. Apart from further differentiation of education programmes, levels and financial contributions, the IP proposes among other things:

- Accessibility of study grants up to the age of 30 years;
- Legal recognition of procedures for validation of prior, non-formal learning;
- Stimulation of dual learning in medium and higher professional education;
- An individual financial facility for employees to stimulate investment in further training;
- Extra attention for groups lagging behind, like migrants, low income groups and 30+ age.

Furthermore, the IP would welcome initiatives to improve transitions from medium level to higher professional education and to develop shortened HE programmes for a better response to varying needs of students and varying labour market demands. The government adopted several of these proposals. They have found their way in new legislation and/or policy programs.

Within the context to widen the temporary dimension of higher education, institutes for higher education define stimulating lifelong learning and improving the employability of graduates and alumni as high priorities.

Three types of programmes can be distinguished in this regard:

- Programmes to stimulate transitions from secondary to higher education
- Programmes to reinforce employability and mobility of graduates
- Programmes to improve access to higher education for new ‘target groups’.

These programmes are in line with the Lisbon objectives. They try to open up HE for broader groups of young people and for people at older ages in the context of lifelong learning.
The first type of programmes aims at a better transition from secondary to higher education. These programmes cover both general as well as professional education. They are directed towards transitions from secondary general education to academic education, from secondary vocational education to higher professional education and from higher professional education to the polytechnics or the general universities. We describe some typical initiatives, here.

- Together with HE-colleges and VET-schools the government runs a long-term programme to increase the number of students in the beta- and technical disciplines. It consists of a mix of public education, targeted information campaigns, subsidies for initiatives of schools, special projects, work experience periods for students etc. The programme is aimed at entrance in medium-level vocational education but it continues the line through to higher technical education. The initiative catches two objectives at once: a) technical studies give graduates good starting points for a professional career in later life; and b) more graduates from technical studies relaxes the tensions on the labour market due to shortages of qualified technical personnel.

- Universities and polytechnics have also developed their own programmes to attract more students in beta- and technical disciplines. Programmes consist of measures aimed at improving of the relationships with secondary schools, like f.i.:
  - Information campaigns on secondary schools in a region
  - Open days for students and parents at technical faculties
  - Short work experience periods for students in a real-life context
  - Better collaboration with secondary schools, f.i. for study projects
  - Training teachers and counsellors of secondary schools at the university
  - Establishing local networks of school teachers and academic researchers
  - Deployment of students as (assistant-) teachers in secondary schools.

Furthermore, within the HE institutes itself measures were taken. Guidance and counselling of bachelor-students has been improved. Tutoring and mentoring systems have been introduced. In some institutes, special ‘linking’-courses were developed to prevent students from dropping out early because of problems with specific subjects (mathematics).

- Several colleges for higher professional education (HBO) have introduced a new type of qualification, called ‘shortened HBO’. This is a 2-year curriculum (normally it is 4 years) qualifying for ‘assistant’-functions in higher occupations. It is an intermediate qualification between secondary VET and the full 4-year tertiary HBO qualification. It is aimed to give better VET-students the chance to get a higher education certificate. Such a qualification
improves f.i. the chances of medium qualified technicians to promote to management positions or specialist functions later in their career.

- In recent years, the *bachelor-master system* has been introduced in higher education, covering both professional colleges for higher education (HBO) and the universities (WO). A 4 years HBO-bachelor is comparable to a 3 years WO bachelor. This 3 years WO bachelor is intended to qualify for labour market entrance for WO students who are not able or not interested to complete a master-study.

A second type of programmes aims at the reinforcement of the labour market position of graduates by increasing their employability and mobility. These programmes might include labour market monitoring and counselling and guiding instruments. But more relevant for this study are measures in the sphere of curricular (re-)design that have an ‘employability-effect’.

- Universities, polytechnics and professional colleges increasingly stress the need for *multidisciplinarity* in their curricula. They open up opportunities for more flexibility in the design of learning trajectories. Programmes get a more modular structure, with the emphasis on specific (blocks of) courses. Students get more opportunities to design their own learning route. They get more options to take courses outside disciplinary boundaries. They can follow courses in other disciplines, at other institutes, within the framework of common agreements about the general curricula structure and content. They can broaden their scope and qualification profile in this way.

- Universities, polytechnics and professional colleges have developed *new integrated study programmes* that combine knowledge from different disciplinary fields. These might be new interdisciplinary studies, crossing traditional boundaries, like biophysics, biomedical sciences, bioinformatics. But also combinations of traditional disciplines within integrated curricula programmes are possible, like for instance qualifications as ‘management and law’ or ‘health and sports’ in higher professional education. Such ‘double’ qualifications improve opportunities for graduates on the labour market.

- Universities, polytechnics and professional colleges build up programmes with broad bachelors and further *differentiations in the master phase*. These differentiations might also cross-traditional boundaries and thus provide better fits between qualifications and labour market demands. Differentiations usually have been developed after consultancy of actors in the professional fields of the disciplines and on the labour market.

These innovations in curricular design, programming and learning practices have led to a certain upgrading of the role of teaching in academic practice. Though research performance still is the main reference point for accountability of HE staff, teaching has gained status. In many universities and polytechnics there are special career lines now for teaching staff, partly
distinguished from tasks, performances and career lines in research. Systems and instruments for personal management now also take specific requirements and capabilities for teaching into account, i.e. in job evaluations, performance ratings, staff training, career development.

A third type of programmes aims at the improvement of access to higher education for ‘target groups’, like women, older people and migrants, who tend to be underrepresented in higher education. Such programmes contribute to a reduction of inequality in this sense. They might also create extra opportunities for life long learning. Such programmes are less common in higher education, however. Reduction of inequalities is not perceived as the highest priority for universities and professional colleges. However, several initiatives can be mentioned here.

- An important theme in the debate is the access of female students to higher education. Though the total number of female students is rather high, they are underrepresented in the natural sciences and the technical disciplines. In close collaboration with the universities and the polytechnics the government has launched several campaigns and projects during the past years to increase the number of female students in these disciplines. Campaigns included measures like career orientation, career consultancy, public education, road shows, female scientific role models etc. Thus far, however, initiatives were not very successful. The number of female students in natural and technical sciences is still rather low. They still are clearly overrepresented in human and social sciences. Higher education still is segregated along gender lines.

- Recently, more attention has been given to the promotion of academic careers of female scientists as an instrument to break through gender segregation in higher education. Several universities have defined concrete strategies and objectives to increase the number of female employees in (higher) research and teaching positions. Though the number of women in higher academic positions is still very low, they have more chances now to become appointed at chairs previously reserved for male colleagues. A side effect is that they have a function as role models, to attract more female students. Again, these measures are particularly relevant for the natural and technical sciences, to a lesser degree for the humanities and the social sciences.

- Older persons will become a target group for institutes of higher education, as life long learning gains importance in the future. Actually, supply of courses for older people is limited, however. There are programmes for older people at some universities, but they are usually do not qualify for the labour market or for occupational careers.

- An exemption is the Dutch Open University, with its supply of courses for distance learning. These courses can be targeted to the needs of older persons, who want to take a second chance to follow an academic study, make a further step in their career or improve their
The social function of higher education in the social models of the European knowledge society

position on the labour market. It is expected that opportunities for open learning and distance learning at later age will increase with the rise of facilities for life long learning.

- There is less attention for migrant students in higher education. Migrants are clearly underrepresented at the universities. Some experts state that this is a matter of unequal access. Others have the opinion that it is not a problem of higher education, but that it is a structural problem of education as a whole, starting with disadvantages in primary and secondary education already. Solutions should first of all be found in these realms.

As it has been said, the initiatives in this field do not have a central place in the policies and practices of institutes for higher education. Attracting students in technical disciplines and improving the labour market position of graduates have higher ranks at the priority list.

Overlooking the arguments, we can conclude that the discourse in higher education focuses on innovation, less on (new) social risks. Furthering equal chances and raising the number of people that get higher education are still important priorities - despite oppositional voices - but the major stimulation programmes first and foremost follow traditional pathways: a) improvement of entrance in the system of young students through better connections with secondary education and b) improvement of the transition to the labour market of young graduates through broader qualifications for broader delineated professional fields. There still appears to be less attention for programmes aimed at life long learning, better opportunities for people at an older age, and better access for groups which are thus far underrepresented.

Within this context, several higher education initiatives are worth to be mentioned:

- Stimulation of entrepreneurship in higher education is a highly favoured instrument of policy agents in the field of technology and economy. An entrepreneurial attitude is considered to be an essential qualification for graduates to find their way in a dynamic and flexible knowledge economy. During their study, students should already start to develop entrepreneurial skills. Several HE colleges, polytechnics and universities have introduced special courses to learn ‘entrepreneurial skills’ in the regular curricula. Courses often combine theoretical modules with experience in actual practice, f.i. in projects to start up a fictitious business, develop a scientific finding into a marketable product, explore the process of licensing and selling products etc. In several professional colleges and universities special teaching chairs for ‘entrepreneurship’ have been installed to stimulate and coordinate efforts in this field and establish relationships with interested parties in the environment.

- A new phenomenon in the professional colleges for HE are lectureships for applied research. This is a programme supported by the government to better equip the colleges for knowledge development regarding applied research. Every college got facilities to establish a number of lectureships, which can cover the whole spectre of disciplines: alpha, beta, gamma. They are
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usually focussed on actual themes and trends having high priority in the professional field. One of the functions of the lectureships is to provide a platform for research and reflection about new developments in the profession (knowledge, methods, practices). Lecturers have facilities to organize ‘knowledge circles’ with teachers, researchers, students and practitioners in the field. Lecturers must become a kind of linking pin between the institute and the demand side, e.g. the professional environment of the discipline involved. This should lead to more interactions and a better circulation of knowledge: from education to practice and vice versa.

- Some professional colleges have established small business centres to provide an extra service to important actors at the demand side, i.e. small and medium sized companies. These centres also are a kind of linking pins. They act in two directions. They work inside-out. They can coordinate initiatives, projects, training programmes, knowledge etc. within the colleges that might be relevant for SME’s and bring them to their attention in an efficient way. They can also work outside-in. They have contacts with the (local) business environment and observe problems and questions companies cope with and colleges might have an answer for. Firms and colleges can be brought together and define joint projects to tackle the problems. Students might participate in these projects and, thus, can get extra opportunities to experience working in a real business environment.

Overlooking the arguments, we can state that initiatives are taken to bridge the gap between institutes for higher education and research and the business community, especially in the technical disciplines at professional colleges and polytechnics. Initiatives first of all are aimed at solving problems due to the innovation paradox. But doing so, they also can contribute to labour market entrance and employability of students and graduates. Establishing relations and networks with actors in professional fields, they create transitional labour markets that offer graduates stepping-stones to more permanent positions. The function of interrelations and networks is not always recognized by actors involved. It should get more explicit support.
Poland

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<tr>
<th>Welfare regime</th>
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<td><strong>Varieties of Capitalism</strong></td>
<td><strong>Learning regime</strong></td>
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<tr>
<td><strong>Active population:</strong></td>
<td><strong>a) Pertaining to the vocational countries</strong></td>
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<td><strong>b) Pertaining to the country group with a medium and increasing rate of high qualified, a high but decreasing rate of qualified and a low rate of low qualified work active population.</strong></td>
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<td>ISCED 0_2: 10,1% (-5,5% from 2000 to 2007)</td>
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<td></td>
<td>ISCED 3_4: 68,4% (-3,7%)</td>
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<td></td>
<td>ISCED 5_6: 21,5% (+9,2%)</td>
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<tr>
<td><strong>Higher education pupils:</strong></td>
<td>21,8% of all pupils and students (+6,0% from 2000 to 2005)</td>
</tr>
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<td>16,7% gross enrolment rate in respect to 18-39 cohort (+3,9)</td>
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<td>From elite higher education to mass higher education.</td>
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**Occupational groups by highest education level:**
- Pertaining to the country group, which shows a high rate of qualified workers in all occupational groups. Only in the category of knowledge worker, the rate of high-qualified workers is higher
- High-qualified workers concentrated in the ISCO level 2_3 and in the ISCO-level 1. In the first case, the rate of high-qualified workers is 61%, increasing 13% point from 2000 to 2007. The level of qualified workers is at 39% decreasing in the same period 16%-points. The group of low-qualified workers is at 7% increasing 7%.
- The rate of high-qualified workers in this occupational category 1 is at 49% in the year 2007 and has increased 11%-points from 2000-2007. In parallel, the rate of qualified workers has decreased from 61% to 51%.
- The rate of high-qualified workers has increased in all categories but in minor degree are the level ISCO 6-8 and 9.

**Economic Structure (**
- Agriculture etc: 4,5% of GDP
- Industry (excl.construction) 30,7% of GDP
- Service Sector: 64,7% (Private 45,5; Public include. Social Serv. 19,2) of GDP

Analyses of strategic policy documents, issues associated with the education policy, the structure of education or the role of universities remain practically unaddressed. Furthermore, both in the scientific discourse and in the consciousness of key actors (among others, of individuals involved in drawing up social policy strategies), social problems and social risks are
a side-effect of the process of transforming the Polish economy. In connection with the above, the accession to the EU and the implementation of the Lisbon Strategy are perceived as a panacea for social problems. Similar opinions on the accession to the EU can be heard in the public discourse. It was clearly visible in the last election campaign (August – September 2007), during which hardly any proposals were presented, neither in the programmes of particular parties nor in public debates of the party leaders, with regard to the education policy and the role of the education system in creating the knowledge-based society, reducing the sphere of poverty or the size of excluded groups (including those excluded from the labour market).

**Social Dimension**


- Period of social protection in conditions of transformational crisis (1989 – 1993)
- Social policy of the prosperity period (1994 – 1997)
- Period characterized by a decrease in economic growth, in which four social reforms were introduced (1998 – 2002)
- Social policy before and after Poland’s accession to the EU (from 2003 onwards)

The basic dilemma of the Polish social policy in the 1990s lay in the fact that it was implemented between two political and economic systems, i.e. it was an order that no longer belonged to the socialist central economy, but still did not have the attributes of a free market democracy. In the subject literature, the model of the social policy that was functioning in the countries of Central and Eastern Europe at that time is sometimes defined as a post-communist model. But this isn’t the place to discuss the development of the Polish welfare regime in the last decades. This short historical reference, however, indicates that the polish development seems high dynamic and in constant change.

In this unstable context, the European Social Model is a kind of reference. In order to implement the European Social Model in Poland, specific objectives of the European social policy have to be tailored to the national social and economic conditions. These objective include:

3. **An active labour market policy**\(^{123}\), which will lead to full employment not only among young people (graduates) entering the labour market, but also among those over fifty. Unemployment is growing in the EU and in order to reverse this trend, some activities

\(^{123}\) The EU adopted the aim of achieving, by 2010, the average employment rate of 70% for men and 60% for women
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must be targeted at ‘high risk groups’. The above aim can be accomplished through instruments such as: a policy regulating the labour market, legislative solutions (the Labour Code) and special programmes addressed to specific groups of employees.

4. **Combating poverty and social exclusion**, reducing social inequalities between particular social groups and regions of the country. To this end, effective tools can be used such as the redistribution of income through taxes, intergenerational social transfers, social inclusion programmes for the benefit of marginalized people, in accordance with the assumptions and tasks set forth in the National Strategy for Social Inclusion, which focuses on the needs of young people. To protect young people from unemployment, an educational offer must be provided that takes into account the needs of the labour market and guarantees employment. It should also prepare young people for a change of profession that may be necessary in future.

5. Providing common access to basic social services in the area of health protection, social care, schools, education and social security. In Poland, this aim is fulfilled by ensuring social service of high quality, free or partially paid for, which is possible only and exclusively by ensuring employment. On the one hand, such solutions protect the system from being overused by people who are not entitled to benefit from it, on the other hand, they ensure a source of funding (taxes). At the same time, an individual is longer over-dependent on external aid. There is a job, there is an income, so individuals can satisfy their needs on their own.

6. **Ensuring an income for people who are unable to work**, such as children and teenagers, the sick and disabled who should receive special care and institutional assistance. The participation of the State and other subject of the social policy are associated with providing support for families bringing up children or looking after old or sick family members. The ESM ensures the development of mechanisms of financial support, due to which families will not fall into poverty because of, for example, having children, but will be able to continue to fulfil their normal functions. It is proposed that an active social policy for the benefit of families should be carried out through tools such as disability and retirement pensions, family benefits, scholarships and tax allowances for families with children of school age.

7. **Investing in human capital**, understood as safeguarding the needs and interests of families within the framework of the family policy, which in Poland was previously based on a traditional model of the family (‘breadwinner model’). The presence of women on the labour market is now a well-established phenomenon, therefore the ESM provides for measures intended to help both women and men to reconcile professional responsibilities with family life. It is also expected that the State will provide financial support within the
framework of the new social model, making it easier for the family to bear the costs of quality upbringing of children. This will require increasing investments in education. Due to such investments, it will be much easier to find a job in future.

After a decrease in the dynamics of economic growth in 2001 and 2002, the year 2003 and subsequent years brought an improvement in the economic situation. In 2004, the rate of economic growth rose to 5.3%, reaching the highest level in seven years. In 2005, the rate of growth fell to 3.4%. According to economic forecasts, the dynamics of growth in 2006 should continue to improve again and may reach 5.5.2%. A sustained high rate of economic growth is characteristic for the new Member States, narrowing the gap in the economic development of particular countries. According to the purchasing power parity, the rate of GDP per capita in Poland in relation to the EU average has been rising since 1996. However, it is still relatively low, amounting to 51.9% of the EU-25 average. Poland and Lithuania belong to the poorest Member States. In Poland, large differences can be observed in the regional development, measured with the GDP per inhabitant – ranging from 70% of the EU average in the Mazowieckie Voivodeship to 31-35% in the Lubelskie, Podkarpackie, Podlaskie, Warmińsko-Mazurskie and Świętokrzyskie Voivodeships.

The overall situation on the labour market is difficult, contributing to a very high rate of unemployment among young people – in 2005 it was 36.9% for people aged 15-24, 35.7% for men and 38.3% for women. A growing number of young people have a diploma of higher education, however, having little experience they often find it difficult to enter the labour market, especially when one considers that many jobs are occupied by people from baby boom generations, which reduces the possibility of accessing employment. High unemployment of young people is also associated with the risk of depreciation of recently acquired skills. A similar phenomenon may occur in the case of the long-term unemployed. In Poland, one in ten persons of working age (aged 15 years and over) remains unemployed for 12 months or longer. Therefore, it is hoped that a longer period of education and updating skills and qualifications will provide young people with a capital that will boost their chances on the labour market. In recent years, the percentage of young people studying in general secondary schools and higher education institutions has been gradually increasing. More and more graduates of vocational and technical schools continue their education.

The improvement of the economic situation that has been observed since 2004 had a stimulating effect on the labour market, contributing to a reduction of unemployment and an increase in employment. However, the society does not equally participate in profits generated by economic growth. Income differences are deepening, while the number of poor people is rising. People who have limited possibilities of improving their living standard, and are therefore the most adversely affected, include:
children, mainly from large families and living in rural areas. Although the level of education of young Poles improves, differences in the access to quality education intensify, resulting in unequal chances for a good start in professional life,

- the unemployed, first of all the long-term unemployed with low or no qualifications; the unemployed living in rural or degraded areas are in the most difficult situation.

The social policy, for which a significant part of public expenditure is assigned, does not fully eliminate poverty and exclusion of some social groups. It follows from the Assessment that it is necessary to focus resources on family support measures, as well as on activities aimed at the activation of a large number of the unemployed. In the case of the long-term unemployed, traditional forms of active labour market measures should be accompanied by the creation of social economy, which has been developing dynamically in recent years and covers more and more areas of the social policy. It must go in hand with the development of an active local policy, because the policy of social inclusion should mainly be pursued at the local level. Efforts in this area should concentrate on fostering cooperation between specialized public administration, the developing non-government sector, business (increasingly aware that it can exert an influence on the improvement of the social situation) and local governments. Local government should begin to play the role of initiators of the social inclusion policy in areas under their administration.

The dynamic development of higher studies in Poland was the effect of transformation of the system of higher education into a market of educational services, governed by the right of mutually balancing supply and demand. The market of educational services at tertiary level was the resultant of a number of social and economic phenomena and processes. They were directly or indirectly connected with the functioning of the system of higher education in Poland and/or had an effect on it. The following causes of the creation of the market of higher education services can be indicated:

1. Practical non-existence of a national educational policy, especially in the 1st half of the 90s (the first document lying down the assumptions of the national educational policy was not drawn up until 1996; moreover, it was too vague to lead to any changes in the system of higher education at that time and in the following years),

2. Drastic reduction of budget expenditure on the higher education (it decreased from 0,88% of GDP in 1992 to 0,78% in 2000),

3. Formal and legal introduction of a market mechanism as a mechanism which regulates the functioning of higher education in Poland (amendment in July 1990 of “The Act on Higher Education” enabled setting up non-public institutions of higher education and to charge
tuition fees for evening and extramural programmes in public institutions of higher education.

The last from above mentioned causes was in fact the reaction of the higher education system authorities on the following phenomena and social and economic processes taking place in the 90s:

1. Growing demand for highly qualified human resources, mainly in the area of business management, partly existing in reality and in part perceiving in result of the intensive ideological propaganda concerning the market economy ideology, in which businessmen (managers, financiers, entrepreneurs, etc.) are shown as its main creators,
2. Growing market value of higher education (in the 80s the correlation between education and the level of income was 0,12; in the first half of the 90s it rose to 0,36; in highly developed countries this rate hovers around 0,40); what resulted in growing educational aspirations of the Polish society (higher studies were increasingly seen as a chance for professional success and high income),
3. Entry on the HE services market of successive age groups from the demographic boom.

In result higher studies were increasingly treated (also by authorities) above all as a chance for personal success in the market economy and individual investment in oneself. Macrosocial approach to the higher education as to a driving force for the social and economic development and investment in human capital (which should be the core of national policy towards higher education) still remains the superficial ideological slogan.

In this situation, public institutions of higher education (deprived of financial and logistic support of the State) could not satisfy the growing demand for higher education and were forced to do something to survive on the rapidly developing market of educational services. This market has been characterized by:

1. A growing number of newly established non-public institutions of higher education (310 non-public institutions of higher education were established between 1992 and 2006),
2. Most programmes provided by these institutions were extramural courses in business-related fields of study (marketing and management, economics, finance and banking),
3. Public institutions of higher education provided extramural programmes: at first in business-related fields of study, then in practically all subjects,
4. Change in the structure of education in public HE institutions, i.e. providing extramural bachelor’s programmes for quite large numbers of students.

As soon as they were established, private institutions of higher education began providing first-cycle programmes, because they were only authorized to confer the bachelor’s degree. Since 1991, public HE institutions had gradually increased their admission limits (if such limits had
been at all specified) for evening and extramural studies, which significantly lowered the selection threshold. Candidates for these programmes were accepted if only their school certificate was good enough or admissions were based on interviews or no admission criteria were used at all. Private schools, on the other hand, usually accepted all candidates without using a selection procedure.

Public institutions of higher education began to organize first-cycle bachelor’s programmes as a result of competition with private schools on the market of educational services. They increased admissions after expenditure on science and higher education had been reduced and tuition fees became an important source of revenues (in 2006 - 13% to 42% of total revenues from educational activities, 20% on the average).

The number of students in Poland rose from 403.8 thousand in 1990 to 1,941,4 thousand in 2006. During that time, the gross enrolment ratio increased almost four times (from 12,9% in 1990 to 48,9% in 2006).

The number of students increased not only due to the creation of non-public higher education institutions, but also, to a considerable extent, due to the development of non-regular programmes in public HE institutions. In the years 1992-2006 the number of students following this mode increased almost 13 times (the number of students following regular courses increased only 3,5 times). In 1992 the majority of students (72%) functioned within regular mode and in 2006 – only 49%.

Between 1990 and 2006 (i.e. in 16 years), 318 non-public schools were established in Poland. In 2006, they provided tuition for only 33,0% of all students. At present, there are 448 higher education institutions in Poland (including only 130 public ones which still have a major share in the market of educational services at tertiary level).

**Structural reforms**

The implementation of the Bologna Process in higher education institutions in Poland was main subject of questionnaire-based studies. The first of them was carried out in 2004 (i.e. before the adoption of legal acts relating to the implementation of the Bologna Process) at 18 Polish universities. Another study was carried out in 2007 (two years after introduction in 2005 the statutory obligation to implement the guidelines of the Bologna Process) among the authorities of 52 higher education institutions (including 29 public schools).

As follows from the 2004 study progress in the area of implementation of the Bologna guidelines was strongly differentiated. In 2004, two-cycle programmes still had not been introduced in most universities; in addition, most respondents were in favour of maintaining the traditional – 5-year cycle of education (long-cycle Master’s programmes). All universities
taking part in the questionnaire had developed a ECTS system, but most of them did not use it. The construction of the system itself also left much to be desired: in most cases it failed to take into account individual work of the student - the most essential component of this system; more credit points were awarded for a class taught by a professor than for the same class taught by a doctor.

Polish institutions of higher education in practice did not have a proper system of quality assurance and evaluation, despite the fact that the declining quality of higher education in Poland was repeatedly described, for at least a few years, as one of the most serious failures of the transformation period.

All universities taking part in the study declared their willingness to intensify efforts to implement the Bologna Process as soon as the relevant legal provisions were introduced. It only means that there had not been any grass-root initiatives in this respect and that academic communities were not really interested in the Bologna Process.

The studies conducted in 2007 provided new evidence, which confirms the above-formulated thesis. All surveyed institutions of higher education declared their intention to take the guidelines of the Bologna Process into account, both in their short- and long-term development strategies. However, these declarations were only partly matched reality, as only in some HEI elements of the Bologna Process were present in both strategies.

The legal act, which formally launched the implementation of the Bologna Process, was the Act of 27 July 2005. Representatives of the authorities of most surveyed higher education institutions stated that the Act gave them proper powers to put the guidelines of the Bologna Declaration into practice. Very few considered it an unsatisfactory instrument. Some had no opinion about it. Those few ones who were dissatisfied with the Act on the implementation of the Bologna Process pointed to the fact that there were no implementing regulations (especially regulations that would define teaching standards and principles for the transition from the 1st to the 2nd cycle of education). The majority of representatives of surveyed higher education institutions complained that could not fully implement the two-cycle system of studies, due to the lack of implementing regulations.

In accordance with “The Act on Higher Education”, higher education institutions have been required, since 01.10.2006, to have a two-cycle structure. However, at the time when this study was conducted (XII.2007), the teaching standards for particular fields of study had not been approved yet. Draft versions of these standards have been available on the web sites of the Ministry for 2,5 years. Some institutions of HEI have used them as a basis for drawing up their own teaching plans or have even taught their students in accordance with these drafts.
The introduction of the two-cycle system of education - as a structural change - were often mentioned positively by the representatives of HEI, but the changes in teaching curricula associated with it were completely passed over.

Analysing the opinions on the new teaching standards and applicable regulations (especially on the minimum number of staff), one can conclude that representatives of the authorities of surveyed schools have quite ambivalent attitudes both to the implementation of the Bologna Process (including its instruments) and its socio-economic effects.

Polish higher education institutions (having to comply with legal requirements) introduce, more or less willingly, the technical aspects of the Bologna Process (i.e. two-cycle studies, the ECTS, diploma supplements, student questionnaires), but it seems that the majority of academic teachers in Poland do not feel and do not understand the significance of the Bologna Process. It appears that only a quite small group of enthusiasts in Poland understand the idea of the Bologna Process and are fully aware of its significance.

Most university teachers associate the Bologna Process with the ECTS system and the obligation to reorganize long-cycle Master’s programmes into two-cycle studies. At the same time, most academic communities believe that higher studies should last 5 years, finishing with the Master’s degree. It is the more surprising when one considers the fact that the two-cycle system of education had existed Poland before signing the Bologna Declaration, even though this system had been established by a mechanical division of long-cycle studies into 3-year Bachelor’s programmes and 2-year supplementary Master’s programmes. Such a division of long-cycle Master’s programmes into two levels took place after the adoption of legal acts regulating the privatisation and commercialisation of higher education institutions. However, traditional long-cycle programmes did co-exist with two-cycle programmes and nearly all graduates of Bachelor’s degree programmes intended to enrol on Master’s degree programmes (as confirmed by the results of numerous studies).

The obligation to introduce a two-cycle system of education has not changed anything in this regard, at least so far. In most fields of study and in most higher education institutions, this division is still rather mechanical and does not fulfil the idea of two mutually independent cycles of study.

As a result, the concept of two-cycle programmes and their provision have little in common with the idea of two-stage education. It especially relates to the construction of study plans and curricula, which are not always consistent with the graduate profile (i.e. the scope of knowledge
and character of competencies and skills of a graduate). In most cases graduate profiles are only a vague general description of competencies and/or a simple marketing offer.\textsuperscript{124}

**Lifelong learning and didactical in HE**

The studies on lifelong learning demonstrate that only 20 percent of professionally active people in Poland have an opportunity to develop in their chosen profession, while others must, unfortunately, retrain for a new job. In comparison, due to regular participation in continuing education, economically active people in the countries of Western Europe usually have a dozen or so vocational qualifications. In the EU countries, 20% of workers take part in supplementary courses/organized forms of training i.e. one in every five employees, whereas in Poland, one in every ten and twelve employees (8-10% of all working people). Every employee in Poland participates, on average, in 2 hours of supplementary training, in an organized form, compared with between 50 and 70 hours in other countries of Europe.

Characteristically, the Polish system of continuing education tends to be seen as synonymous with vocational education, because it usually relates to: training in occupational health and safety, foreign languages, vocational development, preparation for the acquisition of vocational titles or training for a specific profession. All these activities take place in different locations and are usually supplied by the market of training services, the system of training for the unemployed or by public establishments, for example by Continuing Education Centres.

In general, 19% of people aged 25-64 years take part in continuing education (compared with 31% in the OECD countries). Most Poles finish their education when they leave school.

The level of expenditure on education and upgrading of qualifications of adults is still unsatisfactory. It is estimated that budgetary expenditure on lifelong learning in Poland accounts for about 0,6 per cent of total outlays on education. Expenditure on training, vocational development and retraining of human resources in 2001 amounted to only 0,8 % of all labour costs incurred by employers.

Since early 90s, the Polish system of lifelong learning has been characterised by a strongly decentralized and spontaneously developing sector of training services and a system of organized training for the unemployed. One can also observe that these services are provided at different locations all over the country. However, nearly 95% of in-school forms of education are offered to adults in urban areas.

It is estimated that in 2004, training courses were provided by about 12 thousand institutions, 5 thousand of which were schools and over 2 thousand were vocational development centres. The remaining group of providers of educational services are institutions that provide training

\textsuperscript{124} As follows from analysis of several hundred graduate profiles and a few thousand syllabuses.
pursuant to the Act on economic activity and as such they are not registered in any records and are not subject to supervision (accreditation).

These data demonstrate that training, courses and other forms of lifelong learning are treated as economic activities, rather than educational ones. It can be anticipated that the number of educational services will increase considerably, because large amounts of EU funds are available for the operational programme “Human Capital”. It remains to be seen, however, if these funds are used in a way that takes into account the needs of the economy and vocational development needs of a given individual. Having watched the progress of the Polish educational market in the last 18 years, especially at tertiary level, one can have very few reasons for optimism in this respect.

The representatives of the academic authorities were asked about the strategies of their schools relating to third-cycle education (doctoral studies) and postgraduate studies provided as an element of lifelong learning. All respondents commented on the lack of a national strategy or appropriate legislative solutions relating to the three-cycle system of education. Issues such as the objectives of second- and third-cycle education and the principles of financing doctoral programmes remain unresolved. The Experts observed that interest in both doctoral programmes and postgraduate studies had increased in the last few years. To the extent possible (depending on the number of teaching staff and logistic possibilities), the institutions in which the experts worked were trying to develop these studies.
Spain

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<td></td>
<td>Active population:</td>
</tr>
<tr>
<td></td>
<td>a) Pertaining to the low qualified countries</td>
</tr>
<tr>
<td></td>
<td>b) Pertaining to the country group with a high and increasing rate of high qualified, a low but increasing rate of qualified and a high, but decreasing rate of low qualified work active population.</td>
</tr>
<tr>
<td></td>
<td>ISCED 0_2: 44,6% (-9,7% from 2000 to 2007)</td>
</tr>
<tr>
<td></td>
<td>ISCED 3_4: 23,4% (+4,6%)</td>
</tr>
<tr>
<td></td>
<td>ISCED 5_6: 31,8% (+5,1%)</td>
</tr>
<tr>
<td>Higher education pupils:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20,2% of all pupils and students (-0,3% from 2000 to 2005)</td>
</tr>
<tr>
<td></td>
<td>12,2% gross enrolment rate in respect to 18-39 cohort (-0,8)</td>
</tr>
<tr>
<td>Higher education pupils</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mass higher education.</td>
</tr>
<tr>
<td>Occupational groups by highest education level:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Pertain to the country group, which shows a high rate of low-qualified workers the main number of occupational groups. In the category of knowledge worker (ISCO2_3 and ISCO1, the rate of high-qualified workers is the highest</td>
</tr>
<tr>
<td></td>
<td>- High-qualified workers are concentrated in the ISCO level 2_3 and in the ISCO-level 1, but they show also high rates in all other categories (including the no-qualification work places) compared to other EU-countries.</td>
</tr>
<tr>
<td></td>
<td>- The rate of high-qualified workers in this occupational category 1 is at 39% in the year 2007 and has increased 10%-points from 2000-2007. In parallel, the rate of low qualified workers has decreased from 51% to 38%.</td>
</tr>
<tr>
<td></td>
<td>- The rate of high-qualified workers has increased in all categories.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Economic Structure</th>
<th>(in % of GDP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture etc:</td>
<td>3,2%</td>
</tr>
<tr>
<td>Industry (excl.construction)</td>
<td>29,7%</td>
</tr>
<tr>
<td>Service Sector:</td>
<td>67,1% (Private 46,2; Public include. Social Serv. 20,9)</td>
</tr>
</tbody>
</table>

The Spanish debate about higher education is marked in a context, in which it is discussed the need to change the Spanish social production model from a model based on low-qualified work forces to a model based high qualified work forces. This discussion follows in certain manner the European political debate on knowledge society, but it is also rooted in the convinacement that the Spanish economic model needs a profound change to reduce the dependency from
external economic actors and strengthen the competitiveness of its economy. One main road of this strategy is the investment in public research, development and innovation activities.

Higher education in the strict sense of the term, is generally discussed under three interrelated aspects:

a) The precarisation of graduate employment. Similar to Italy, also in Spain an impoverishment of the labour situation of graduate workers is observable. It is, on the one hand, a heritage of the traditional research system, with a low level of public and private investment in scientific activities. During decades, the situation of young researchers has been characterised by precarious labour conditions or long-term non-labour situation (for instance: research grants). But also of the dissynchron evolution of the higher education system and the socio-economic system conducted the impoverishment of the working conditions of the graduates. The Spanish social production model is characterised by its low level of innovation and its strong orientation on sectors with low qualifications as for instance construction and tourism. The Spanish social production model doesn’t offers sufficient number of work places for high-qualified workers.

b) The dissynchronity between higher education and labour market is also discussed under the header of the mismatch between supply and demand at the graduate labour market. This doesn’t make only reference to a quantitative unbalance between supply and demand, but also to a qualitative question in terms of a) the unbalance between fields of study and economic sector, and b) the inadequacy of the competence acquired in the higher education in respect to competences required in the labour markets.

c) A third focus of debate is the underfunding of the higher education, which induced to look for new forms of fundings. This makes reference to an underfunding of the research of the higher education institutes, and in a minor degree to the education activities. In the line of the EU-strategy, the search for new sources of funding leads to the increasing use of public-private partnerships in research. In the education area, it is discussed to increment the study fees, which are traditional related to the credit value of an academic course. This would be accompanied by new forms of the financial support of the higher education career of students form less favoured social classes. However, this is still in discussion and no concrete measures have been taken until now.

Social Dimension

The data of the active population and employment show that the Spanish education structure of the active /employed population is quite different to the EU. In Spain the group of qualified workers doesn’t achieve 25% of the active population. In 2000 and in 2007, the main group has
been the low qualified active/employed population. This seems a typical feature of a Mediterranean welfare regime. But the difference to all the other EU-countries consists in the fact that the group of the graduate workers signifies in Spain around 1/3 part of the employment and is higher then the rate of the qualified workers. In this aspect, Spain is atypically for the Mediterranean countries.

Also the distribution of the graduate workers among the occupational categories shows some particular features. In 2007, Spain shows the lowest EU rate of graduate workers working in an occupation classified in the categories ISCO 1-3. The rate of graduate workers working in the ISCO categories 2_3 is the fourth lowest one among the EU-member states. On contrary, the rate of graduate workers in the ISCO 4-5 occupation is the third highest rate (19,5% of all graduate workers), the highest at ISCO 7-8 (10,6) and also in the categories of unqualified occupations ISCO 9 (4%). This distribution of the graduate workers among the occupational categories can be taken as an indicator for the mismatch between demand and supply, but also for a ceiling out effect. The qualification level of the different occupational categories confirms this impression. Meanwhile the level of high-qualified workers in the categories ISCO 2 and 3 are considerably higher then the EU-27 average, this is also true for all other occupational categories in spite that they don’t required such qualification level. It calls the attention that 8,7% of the workers in the occupational category ISCO-9 has a high-qualification level.

This situation is discussed under the notion of over-qualification, but it can also be interpreted in the sense that higher qualification has become a functional equivalence to the vocational training. It indicates also a trend to a two-tied labour market in respect to the qualification levels.

Another important aspect is the precarisation of the Spanish labour market, which affects also even more the segment of high-qualified workers. The percentage of temporary contract is in 2007 with 26,5% of the employment substantially higher than in the area of the EU-27 (12,1%). The temporary contracts affect the employees at all education level. Its incident is in Spain minor among the high-qualified workers. However, with a degree of more then 20% of the employment it can also be considered as normal contract form at this education level. In the area of the EU, the incident of temporary contracts at this educational level is with around 10% in 2007 considerably minor than in Spain. The Spanish science labour market is even more characterized by the precarious work conditions (e.g. temporary contracts), but also grants without formal labour relations [see Cruz Castro & Sanz Menéndez 2004].

Also in respect to earning, the Spanish Science labour market it compared to other EU-countries characterised by the significantly lower average income of the individuals with tertiary education (in 2004 or 2005 respectively). Only in Denmark and Sweden the income difference is lower.
These indicators induce the hypothesis of an unbalanced S&T labour market, which often forced young graduates to accept, at the beginning of their careers, jobs under their qualification level and/or to accept a job with precarious conditions. A trend to precarious work conditions in the Graduate Market is perceived. The increasing number of S&T workers shown in the official statistics is partially based on the growth of temporary works with low salary, to which it must be added that “fellowship had become the regular labour relationship even for experienced PhD’s.” [Cruz Castro & Sanz Menéndez 2004: 3]. However, the higher education improves the possibility of the owner of academic titles in the labour markets. All indicators (activity rate, employment rate, unemployment rate, temporary work and earning) show that the persons with higher education attained has in general position in the labour market. The situation of the female graduate workers is even worthier in comparison to the male graduate workers. The growth of the numbers of emigrants in the last decade together with the higher birth rate in emigrant families indicates an emerging ethnic problem in higher education.

Attention must be paid also to the changing social structure of the students. Actually around 50% of the Spanish students are combining studies with work. In so far, the figure of the full-time student is a misleading concept. The changing social behaviour of the students must be taken into account in the design of social risk policies in higher education.

At least, the Spanish higher education system shows comparatively high enrolment rates, but the number of students has decreased in the last decade from almost 1.554 thousands in the academic year 2000-2001 to 1.433 thousands in 2005-2006. One of the reasons of this decline is the demographic decay in the age cohort from 18 to 24 years, but it could also indicate a relative decline of the higher education in respect to alternative ways of education and training as the vocational training.

**Structural reforms**

As in other countries, the Bologna process has been in the last years the most important reform initiative in the Spanish higher education system. Yet in 2001, the Spanish government put on the way a reform of the university system, which was approved by the Spanish Parliament in the same year. This reform did not pretend to reform only one part of the University act but to substitute it for a totally new act: the “Ley Orgánica de Universidades” (LOU, the Organic Act of University).

This act can be considered as the first but insufficient legal step in the application of the Bologna principles and towards the EHEA. It includes some detailed information regarding the European supplement, the structure of the cycles, the European credits and the mobility of the students. Some specific aspects were regulated later in different decrees.
The creation of a system of quality assessment and accreditation has been one of the priorities in the Spanish higher education policies in the last decades. From 1993 on, a System of quality assurance was set up in Spain in accordance to the priorities of the European Union. It is like the whole Spanish System of higher education, decentralized and composed by one national agency and the corresponding regional agencies. The LOU, which has impulse the creation of the national agencies and of many regional agencies, has not provided a coherent framework of responsibilities. The national and the regional agencies are sharing exactly the same responsibilities, but limited just to region where it is located. First Spanish programme of quality assessment started in 1995 and finalised in 2001. The programme covered teaching, research and management. In the year 2001 the creation of a National Agency for Quality Assessment and Accreditation was authorised, which was set-up as a state foundation in July 2002.

The creation of this national agency as well as the regional agency are highly relevant for the Bologna reform process, as they have been and are responsible to validate the new curricula to be implemented in the course of the reform process. The national quality agency has published several white books on specific curricula to guide the reform of the curricula at the university level. A reference in the process of the curricula reform has been the Tuning project co-funded by the European Union and leaded by a bask university.

However, the concrete reform process started relatively late after a long discussion about the length of the bachelor and the master cycles and experimental phase to test the new curricula. At least a decree approved in 2007 established the “4+1” system (4 years bachelor plus 1 year master). It means that Spain opt for a system that is clearly different from the leading countries in the UE, which opt for “3+2” (3 years bachelor plus 2 year master). As many universities have opt in the testing phase for a “3+2”-cycle, this late decision produced turbulences in the application of the Bologna principles.

The option for the “4+1”-cycle can be interpreted in the following way: the professionalisation, which takes place in the 1st cycle, is conceived as more relevant for the Spanish society than the academisation assigned to the 2nd cycle. But there are also voices, which interpret the strong differentiation into bachelor and master cycle in the way, that the bachelor will provide a more general education resolving the quality problems in the secondary school conducing later to a professionalisation in a specific knowledge field. The academisation will then take place in the third cycle of the PhD.

However, the fact that the decision for the 4+1-cycles has been taken in the year 2007 is a clear indicator that the Spanish higher education system is still in the process of adaptation to the new curricula structure and it is, in so far, to early to discuss the intended and unintended consequences of the reform process.
But it must be underpinned, that this reform process, conceived as a top-down reform process has encountered resistance in parts of the students collectives, but also in part of the teaching staff. The main arguments against the process are focused on strong orientation of the reform to the labour markets, but also to the suspect that the Bologna process will be accompanied by an increment of the study fees contributing so to the privatisation of the founding of higher education. Another focus of discussion has been the use of the curricula reform to reduce the number of certificates eliminating some fields of studies with a low number of students through the integration of different fields of studies in one. This affected overall some fields of studies in humanities, but also in social sciences. In this sense, the Bologna-reform is a highly contested terrain in which different argumentation lines and reform strategies are interlinked. In so far, Bologna is only a label for a wider debate of the future orientation of the Spanish higher education.

**Lifelong learning and Didactical Innovation in HE**

The lifelong strategies of the higher education institutes are mainly focused on the post-graduate training programmes, which the Spanish universities have developed even more since the 1990’s. In spite of an agreement signed by the Spanish universities to homogenize criteria, the programmes are very heterogeneous. The continuous education of the universities has been focused mainly on the post-graduate phase and not on all kinds of life-long learning measures.

The Spanish universities created specific units to manage the life-long learning programmes with the objective:

- To sensitize the environment on the lifelong programmes and its variations (post-graduate programmes and continuous training).

- To promote and facilitate the relation between the universities and the socio-economic environment.

There isn’t in general any direct effect on the education and training programmes of the work of these units taking in consideration that they accomplish the function of dynamotor of the interaction between the university and its environment [UPV, 2004].

<table>
<thead>
<tr>
<th>Table 19: Evolution of the post-graduate programme by number of courses and type of programme (2004-2005).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PhD</strong></td>
</tr>
<tr>
<td>2000-2001</td>
</tr>
<tr>
<td>2004-2005</td>
</tr>
<tr>
<td>Growth rate</td>
</tr>
</tbody>
</table>

Source: CRUE
It must be distinguished between PhD programmes oriented to research providing the successful students with an official title, and the other programmes of the no-regulated education and training, which provides the participants with titles of the own university.\textsuperscript{125} Within the own titles, there are two types:

- **Masters** ("Master universitario" or "Magister universitario") with at least 50 credits\textsuperscript{126}, which requires generally a university title of the 2\textsuperscript{nd} cycle for access. Nevertheless in several universities the length of the courses is shorter (between 30 and 40 credits, and there are universities, which accept people with a university title of the 1\textsuperscript{st} cycle to access to these courses).

- **Specialist** or Expert with at least 20 credits which are oriented to persons with a university title or professionals with a education level to access to university education, proven their large professional experience. But within this parameters exist a wide heterogeneity between courses (including a shorter length of the courses measured in credits).

The character of these last programmes is more that of continuous training. The number of these courses has increased considerably giving answer to the growing demand for continuous training of high-qualified persons (Table 19). Table 20 shows that the number of participants in both types of programmes has increased around 21%.

<table>
<thead>
<tr>
<th>Table 20: Evolution of the post-graduate programme by participants and type of programme (2004-2005).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PhD</strong></td>
</tr>
<tr>
<td>2000-2001</td>
</tr>
<tr>
<td>2004-2005</td>
</tr>
<tr>
<td><strong>Growth rate</strong></td>
</tr>
</tbody>
</table>

Source: CRUE

The scientific and technological progress obliged the professional with an academic title to update continuously their knowledge and competences, or to accomplish the tasks related to their work place, or to increment the possibilities of labour market insertion, or to increment the possibilities for professional promotion.

Besides these programmes, the Spanish universities are developing even more programmes of continuous training. This trend has become stronger after the approval of the LOU. But the

\textsuperscript{125} About the lifelong training policies of the universities see UPV (2004).

\textsuperscript{126} The term credit doesn’t make reference to the credits of the ECTS. It is a measure to establish the value of the courses based on the temporary length of the course measure in units of teaching.
policies of the universities and the training programmes are very heterogeneous. And at the national level, there are no data to evaluate the volume of these programmes. However, two types of programmes, which are generally developed in the Spanish universities, can be identified:

a) Courses for elder persons: these are generally programmes with social or cultural contents framed in the strategy of lifelong learning fused on the age group between 50 and 55 years. The objective is to improve the quality of life and promoting the participation of these citizens as social dynamotors.

b) Enterprise courses: the Act of University Reform of the year 1983 opened space for the collaboration between enterprises and universities. This does not make reference only to research and development projects, but also to training programmes. These courses are taken different forms, depending on the universities. And there are no data about the volume of these training actions. One reason is that these actions are including many times in wider cooperation agreements of research and development projects between universities and enterprise.

The debate around the post-graduate programmes now focuses on how to integrate these programmes in the Bologna process. The conference in Salamanca (2006) of the Red universitaria de Estudios de Postgardo y Educación continua (RUEPEC, University Network for post-graduate programmes and continuous education) was centred on this question. As a result, they proposed to look for criteria of homogeneity with the objective to achieve a common opinion about the status of the own titles and the continuous education with the European Space of Higher Education and to strengthen the basic characteristics of this kind of higher education (i.e., flexibility, demand and labour market orientation).

Within the Spanish discussion about the Bologna Process, one of the main issues has been the need to didactical innovation, which must accompany the paradigm change form teaching to learning. These changes caused a need for new didactical methods and changes in the form how the programmes and plans are going to be designed [Cáceres Salas & González López, 2005]. Also Margalef [2005] argued to use the opportunity offered by the convergence process to go beyond the legal imperatives and to transform the Spanish higher education towards an active, comprehensive, reflexive and critical learning. The discussion about the higher education goes further on and proposed to rethink didactic methodologies and contents, promote creativity and transdisciplinarity [Buzón & Barragán, 2004: 68]. The Bologna Process is not the only reason for claiming a didactical innovation. So for instance, the application of ICT’s in the universities has provoked a discussion about didactic in higher education. It was considered that the increasing virtuality of the learning spaces at the universities requires mayor changes in the organization of the learning and teaching activities. The lost of the face-to-face relation between
lecturers and students, but also the lost of direct contacts between the students caused new needs in the didactical organisation [Sigalés, 2004]. This implies also a change of the role of the lecturer. Virtual learning portals permit the students to access to the contents from the beginning of the lectures. This changes the relevance of the classes, where the lecturers transmit the contents to passive student. The tasks of the lecture will change from the transmission of knowledge to support the students in the construction of their own learning processes.

Another aspect, which generated a discussion about didactic has been the application of the competence approach to design higher education curricula and study programmes. This discussion has emerged in the course of the Bologna process, but is not intrinsically related to the original Bologna process. At the European level, the competence aspect came into the discussion by the policy to define a European Qualification framework based on knowledge, skills and competence. But it has a longer tradition in the field of vocational training. It expressed the strategy to closer the relation between higher education and labour markets. Its application in the Spanish higher education signifies in the opinion of Rue [2007] a break with the traditional approach.

The application of the competence approach should cause internal changes in the higher education system. It responds to the switch from a teaching to a learning focus. It is pretended to put the student and his learning capacity in the centre of the design of curricula and study programmes. The use of the competence approach requires, in principle, to rethink the relation between didactical methods, learning modes and evaluation focused on the competence development in the course of the higher education.

The traditional concept of the Spanish higher education considers fundamentally two learning modes: theoretical lectures and practical classes, as laboratory work or fieldwork. But the paradigmatic change from teaching to learning obliges to take in consideration other modes of learning too and to conceive the learning process in a global way [de Miguel Diaz 2005: 31]. The learning modes can be distinguished in presencial and non-presencial activities. The first ones are based on the presence of lecturer and learner in a same time-space as for instance theoretical classes, practical classes in laboratories or tutorials. The second ones are these learning activities, which the learner can develop independently and autonomously learning alone or in a team [de Miguel Diaz 2005]. Taking into consideration the plurality of the learning activities in the design of the study programme requires to rethink the relations between teaching and learning, and the learning/teaching methodologies [de Miguel Diaz 2005: 36].

127 De Miguel Diaz (2005: 31) defines learning modes as the different scenarios in which the different activities of the lecturers and students takes place during the course in function to the proposals of the didactic actions, the tasks to be realized and the resources required for their execution.
The integration of different learning modes in the curricula design and the study plans should have implications on the didactic methodologies. The different competences of the academic qualifications and the diverse learning modes require flexible didactic methods to give adequate response to the requirements of the different learning contexts [Zabala 1989]. De Miguel Diaz [2005] is talking about a global perspective to design the learning environment.

The learning paradigm insists in the fact that learning is an individual and social process, for which the student is responsible. However, the university as an institution and professor plays an important role for the success of this learning process. De Miguel Diez [2005] resumes this problem in the question: How to teach the student to learn in an independent and autonomous form? Making reference to Biggs [2005], he sustained that four conditions are necessary: a well-structured knowledge base, an adequate motivational context; active implication of the student and his interaction with others. In other words, the only way to achieve a successful learning of the students is to confront them with situation in which they should apply their new knowledge to resolve realistic problems, taking decisions and learn in an autonomous, critical and reflexive way. On this background the challenge for the academic staff in higher education consists in design the learning situations in such a way that the students progress autonomously in their learning process.

De Miguel Diez [2005: 40] mentioned seven didactic methods: magisterial lessons; case studies, resolving exercises or problems, problem based learning; project oriented learning, cooperative learning and learning contracts. Imbernon and Medina mentioned more types: elaboration of projects, guided studies, guided debates, quick discussion, foro, demonstration, role games; seminars, case studies/methods, critical incident, strategies of prior organisation; flash or wheel of interventions; simultaneous dialogs; etc. This is not the place to go in depth into the discussion of these methodologies, but Margalef [2005] call the attention to the fact that the “new didactical methods” focus on the learning process discussed in the Spanish Bologna process are not new approaches in higher education. On the contrary, there are many lectures applying coherent didactical methodologies centred in the learning process of the students. Through the pedagogical and didactical research, it is well known that teaching does not automatically lead to learning and that there is not a linear link between teaching and learning. The students must learn by themselves.

Another important aspect of methodological change is the organisation of the study programme and the courses. The focus on the learning processes and the competence development requires, in principle, a planning based on teamwork between the persons and areas involved in the competence development. Generally the competences to be developed go beyond the borderlines of the established academic fields. For this reason, it seems reasonable that the planning of the learning processes has to be interdisciplinary. That requires the creation of
University structures besides the traditional work division through academic fields in faculties and departments.

This implies also a change in the role of the lecturers towards a supervisor and director of the students learning process, whose outcome will be assessed only. “While the role continues to be critical, it shifts more and more towards containing higher levels of advice, counselling and motivation in relation to the importance and place of areas of knowledge, understanding and capacity to apply that knowledge, in relation to the profile which needs to be attained, personal interests, gaps and capacities, critical selection of materials and sources, organization of learning situations, etc.” [González & Wagenaar, 2003: 64]. Stating that the classical didactic model in the Spanish higher education is based excessively on magisterial lectures, Garcia Nieto [2005] opines that the improvement of the system of higher education depends on the implication of the lecturers and the students. The new profile of the academic staff in higher education can be resumed in Figure 20.

![Figure 20: Role of the academic staff in Higher education.](source)

Focusing on the lecturers, their sensibilisation is a previous step needed to put in action any reform of the system of higher education in the line of the Bologna process. The success of the Bologna process doesn’t depend only on the adequate infrastructure and the redesign of the academic titles and study programmes but in the preparation of the academic staff [Sanchez 2005: 7]. For this reason, it is considered as a surprise that the documents on the convergence to
The social function of higher education in the social models of the European knowledge society

An EHEA doesn’t paid many attention to the role of the academic staff in this process [see Palomero & Torrego, 2005: 33]. At least, the success of this reform process depends on how each lecturer act within his area using the adequate methods to development a high quality education [Buzon & Barragán, 2004: 79].

One of the main challenges of the process is the adaptation of the lecturer profile to the emerging environment. The mentioned report of Valcárcel et al. stated that the new profile is probably very different to the traditional profile of an academic lecturer. First of all, the university lecturers are, until now, specialist in their academic discipline. In the new University environment, they must know and transmit also general competence (team work, search of information…) and specific professional competences. The academic staff has the role of catalyst and activator of the learning process. And independently of the didactic methods used, the most important element of the learning process is the personal relations between the student and the professor and between the students [see de Miguel Diez, 2005: 41]. The lecturers must have the adequate competences to accomplish their function in the learning processes, which are in the opinion of Valcárcel et al. [2003]:

- Knowledge of the learning processes of the students within the natural and academic context.
- Planning of the study programme and the didactical interactions.
- Use of the adequate didactical methods and techniques.
- Management of the didactical interactions and the relations with the students.
- Evaluation, control and regulation of the learning process, but also of the own teaching process.
- Knowledge of the legal and institutional norms, which regulate the rights and obligations of the lecturer and the students.
- Management of the own professional development as lecturer.

One of the main problems to implement successfully a training programme for academic staff is, contrary to any other educational level, the absence of any legal norm, which regulates the psycho-pedagogical requisites for lecturing in higher education. It seems that the dominance of the academic discipline from part of the lecturer is sufficient conditions for an adequate knowledge transmission and a guarantee for the students’ learning. This legal vacuum can be interpreted as a symptom for the low interest dedicated in the system of higher education to the issue “to learn to teach” [see Palomero, 2003: 29].

However, to assure its success, any training measures for academic staff must be accompanied by measures to recognize the teaching activities as an integrated part of the professional activities of the academic staff and as a criterion for professional promotion [Sanchez, 2005: 7].

Until now, the history and the profile of the University professor are closely linked to the
The social function of higher education in the social models of the European knowledge society

research activity and the teaching activity is only secondary. Also the evaluation of the professional performance of the academic staff is focused mainly on the research activity [Garcia Nieto, 2005].

In turn of the Bologna process the Spanish higher education community and the policy makers have developed a complex debate with different argumentation lines and different objectives behind, which are often contradictory, but which have the main objective to reform the higher education system. But the different discussion strands don’t cover sufficiently the social dimension of the higher education.
3.4. Similarities and Differences of HE Systems in the NESOR countries

Empirical evidences collected during the fieldwork of the NESOR project and the completed literature survey support the validity of the “welfare regime” approach as well as the “varieties of capitalism” approach. Similarly to the variety of the European Social Models (ESM), visible varieties were identified in the practice of the Higher Education (HE) Systems in the countries participating in this project.

This project had no ambition to identify in detail the mutual relations between the HE systems and the ESMs, we may say that the performance of the Dutch and Austrian HE (belonging into the “Nordic” and the “Continental” versions of the market economies) are better in comparison with both Italy and Spain (belonging to the “Mediterranean” country cluster) and with Hungary and Poland, belonging into the category of the New Member States (NMS).\textsuperscript{128} But it has had the ambition to underpin the difference in the societal learning performance on the background of the different social production models of the countries.

Beside the transfer of the “formalised” or “coded” knowledge by the HE to the various clients in the form of the “expansion” of the higher education system, the universities surveyed in this project are confronting – in various degrees – with the development of the research function or “portfolio”. The lack of decisive success is well reflected in the weak research performance of the European universities in comparison with their US counterparts. Even, when they successfully create new knowledge, they are coping with the problems of transferring new knowledge into the economic practice. In the Netherlands this phenomenon is called the “innovation paradox”. According to the experiences of the interviews with both stakeholders and experts, these difficulties can be attributed to the shortage of the networking capacities of the HE system and especially the weakness of the strategic or high-value added partnership with business and administrative communities. However, revising the discourse on innovation in other countries, we observed similar discourse but under different terms. The objective is to nearer university research to the economy and society.

The revision of the European and national discourse in turn around the knowledge society made has shown that under the umbrella of the European knowledge society exist quite different national discourse. And the revision of the discussion of social models in turn around the

\textsuperscript{128} Unfortunately, until present we do not know such generally accepted approach on the “variety of capitalism” or “social models” in the NMS countries. However, according to the Sapir’s assessment (Sapir, 2005), on both “efficiency” and “performance” of the Polish and Hungarian social models, Hungary belongs into the “Continental” and Poland into the “Mediterranean” country cluster. We need more, empirically well documented analysis to develop such kind of typology of the social models in these emerging market economies in the Central and Eastern European region.
approaches of the welfare regimes and varieties of capitalism underpins the existence of different social models and different learning performances. The Global Competitiveness Index has been taken as an indicator classifying the NESOR-countries in three groups: The Netherlands and Austria seem to be clearly ahead on the road towards the knowledge society, whereas Italy and Spain take middle positions and Hungary and Poland for the time being can be seen as laggards. This confirms in certain way the approaches of the welfare regime regimes combined with the approach of VoC. The Nordic and conservative welfare regimes are more oriented to radical or accumulative innovation then the countries of the Mediterranean and the transitional welfare regimes, which form our point of view tends to be oriented on adaptive innovation.129

The learning performance of the NESOR countries in the last decade has as a common dominator the increasing weight of the graduate workers in the active population and the expansion of higher education. Higher education seems to be the choice of the population of the transitional countries to confront the new socio-economic situation created after the break down of the communist regimes. But as the examples of Poland and Hungary indicate this expansion create tension with the economic structure, which are in both cases characterised by the doubts to opt for a new social production model based on high qualified work places or a social production model based on low qualified (or qualified) work places. A similar situation can be observed in Spain, where the expansion of higher education hasn’t been corresponded until now with the creation of high-qualified work places through the change of the actual social production model to one based on high-qualified work places. This situation has its reflection in the fact that Spain shows a reduction of its gross enrolment rate and its participation rate. This indicates that the learning performance in general and the higher education performance more specifically is quite different among the NESOR-countries as well as the social production models are quite different as well.

Taking as the reference the rate of graduate workers in the active population, we can establish three groups in respect to the educational structure of the NESOR-countries:

- The Netherlands and Spain tends to have a generalised provision of graduate workers with rate of graduate workers in the active population higher than 30%. In both countries, this rate has increased from 2000 to 2007 more the 5%-points. But the Netherlands has also a relative strong vocational structure accompanied with a rate of low educated active population above the EU-average. On the other side, Spain still has a high degree of low-

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129 Adapative innovation means here that they are importing innovation developed in other countries or they exported research results, which in other countries are transferred to technological innovation applied in production or services processes. This is due to the low innovative behaviour of the economic system.
educated active population and the rate of the qualified active population is lower than the rate of the other two levels.

- **Hungary** and **Poland** have a quite similar educational structure. They can be considered as countries with a mass provision of graduate workers with a rate of between 20% and 30%. The rate of the graduate workers has grown considerably in both countries from 2000-2007. Both countries show also a strong vocational structure with more than 65% of the active population with an education certificate corresponding to the ISCED-level 3-4. That means, that the rate of low-educated active population is comparatively low.

- **Austria** and **Italy** are countries with an elite provision of graduate workers with less than 20% of their active population at the ISCED-level 5-6. This is accompanied in the case of Austria with a strong vocational structure and a medium rate of low-educated workers; meanwhile Italy has a relative strong vocational structure and a high rate of low-educated workers.

If we take the ISCED-level 3-4, that means the degree of vocationalisation, as reference point, the grouping of the countries is different:

- **Austria**, **Hungary** and **Poland** are countries with a strong vocational structure that means more than 50% of the active population have a qualification corresponding to the ISCED-level 3-4. But meanwhile Hungary and Poland show a development of the graduate workers to a mass provision (more than 20% of the active population), Austria can be still classified a country with an elite provision of graduate workers in spite of its increase.

- The **Netherlands** and **Italy** are countries with a relative strong vocational structure. But meanwhile Italy shows a high rate of low-educated active population, typical of a Mediterranean welfare regime, as well as an elite provision of graduate workers, the Netherland shows a lower, but relative high rate of unqualified active population and a trend to the general provision of graduate workers.

- At least, **Spain** is a separate case with a weak vocational structure accompanied by a high rate of low-qualified workers, typical for countries of the Mediterranean welfare regime, but with a trend to a general provision of graduate workers.

In respect to the learning performance in the higher education area, we can state for the NESOR-countries -grouped by types of welfare regime - that:

**Transitional welfare regimes**

- **Poland** has one of the highest rate of expenditure in higher education institutions with 1.6% of their GDP and has inverted so the situation of 2000, when they where at the back of the public and private expenditure in the EU. In 2005, **Poland** is one of the frontrunners in Europe. It has together with Portugal and the UK, the highest rate of private expenditure
in HE-institutions. Only 12,7% of this expenditure went in 2005 to R&D activities, which is one of the lowest rates of the EU-countries. This is accompanied by a considerable growth of the gross enrolment rate of HE-students (4,01) and of the participation rate of HE-students. Both indicators are considerably higher then the EU27-average.

- **Hungary** has with 1,1% of its GDP a low rate of expenditure in higher education institutions compared to other OECD countries. This is the same rate as in 2000. The private expenditure rate has decreased from 0,3% in 2000 to 0,2% in 2005. 22,5% of this expenditure has been assigned to R&D activities in 2005, which is under the average of the EU countries. In spite of the maintenance of the expenditure rate on higher education, the HE-gross enrolment and the participation rate has grown considerably as in the majority of the transitional welfare regime countries. Both rates are actually slightly above the EU27-average.

**Mediterranean Welfare regime countries**

- **Italy** has a low expenditure rate with 0,9% of the GDP in 2000 and 2005. The public expenditure has decreased in this period form 0,7% to 0,6% meanwhile the private expenditure has increased from 0,1% to 0,3%. Around 33% of the expenditure is spending on R&D activities. The Italian gross enrolment rate is with 11,6% around 1% lower then the EU27-average, where as the HE-participation rate is slightly higher as the EU-27 average.

- **Spain** has a low rate of HE-expenditure compared to other OECD-countries. This rate has decreased form 2000 to 2005 due to the reduction of the private expenditure form 0,3% to 0,2% meanwhile the public expenditure has been maintained at 0,9% of the GDP in the same period. Around 29% of this expenditure is spent in R&D activities, which is more or less on the EU-average. Spain has a gross enrolment rates slightly lower then the EU-average, which has decreased from 2000 to 2006 in 1%-point. Also the HE-participation rate has decreased, but is still 2,4%-points above the EU-average.

**Conservative welfare regime country**

- **Austria** has with 1,3% of the GDP a medium expenditure rate in HE-institutions. It has increased from 2000 to 2006 in 0,1%-points due to the increase of the private expenditure form 0,0% to 0,1% of the GDP. Around 32% of the expenditure is assigned to R&D activities, which is higher then the EU-average. The Austrian gross enrolment rate is 2,4%-points lower than the EU27-average, as well as the HE-participation rate. The gross enrolment rate is practically the same in 2006 than in 2000, but the HE-participation rate has decreased slightly 0,5%-points.
Social-democratic welfare regime country

- Netherlands has with 1.5% of its GDP a medium HE-expenditure rate in institutions similar to Austria. This rate has increased in 0.1% points from 2000 to 2006 due to the growth of the private expenditure (0.3% of the GDP). With 37.2% of this expenditure assigned to R&D activities, the Netherlands are one of the frontrunners of the EU27-countries together with Finland and Germany, but still far away form the Swedish indicator. The Netherlands has with 12.12% a HE-gross enrolment rate slightly above the EU27-average, which, however, has increased 2.64% points. But the HE-participation rate is in spite of its growth of 2.1%-points 1.6% points lower then the EU27 average.

A common aspect of the EU-countries is the “expansion” of the higher education in terms of the gross enrolment rate with the exception of two NESOR-countries: Austria and Spain. In the transitional countries, including the two NESOR-countries Poland and Hungary, the increment of the enrolment rate is in generally higher then 3% with the exception of the Czech Republic and Slovakia with a growth rate of 2.4%- and 2.3%-points respectively. Finland has incremented its enrolment rate as well in turn around of 3%-points. Two other NESOR-countries: the Netherlands and Italy show increased enrolment rates in turn of 2%-points (2.1%- and 1.8%-points respectively). Also countries like Belgium, the United Kingdom, Germany and Malta show a growth rate above between 1.5%- and 2.5%-points. Ireland, France and Portugal have more moderate growth rate between 0%- and 1.5% points. The two NESOR-countries Austria and Spain has decreasing enrolment rates as well as Bulgaria.

The expansion of higher education leads in many countries also to the increment of the numbers of universities or faculties and the diversity of institutional settings. For example, in Italy the university system was developed on the principle of the “one municipality – one University” with the following results: In year 2004 there were 89 Universities, while in 2007, they have raised to 115 … The University is structured in 370 different scientific disciplinary sectors, against 60 in the UK and 54 in France. Similarly in Hungary, number of faculties has increased during the last 17 years: in 1990, there were 117 faculties and presently Hungarian universities have 172 faculties.

The expansion accompanied by fragmentation of the disciplinary structure, together is perceived often as deteriorating the quality of the Higher Education. In this relation it is worth to mention the interview with one representative of the Polish employer, who criticised the structure of the Higher Education and complained “… especially for producing too many ‘undereducated specialists in economy and management.” Also in Hungary, the quality of the higher education is questioned in face of the considerable expansion of the number of students as well as new universities in the last decades. More generally, this problem can be framed in the discussion of the adequacy of the education and training to the requirements of the society, but more
specifically to the economy (labour market). This discussion about the employability, following the EU-directrice, is observable in all NESOR-countries. But especially in the countries of the Mediterranean welfare regime and the transitional countries, this discussion is virulent. In spite of their different learning performance, Spain as an Italy are facing the problem of the precarisation and inadequacy of the graduate labour market, which seems strongly related to the problem of the mismatch between supply and demand of graduate workers, but also in the Spanish case to the chronic underfunding of public and private research, development and innovation. Also in Hungary and Poland, this is a strongly emerging issue in the public debate due the recent expansion of the higher education and the graduate labour markets. The discussion is focused on the adequation of the higher education to the requirements of the labour market in the initial phase of higher education.

3.4.1. Higher Education in the making of the European Knowledge Society

The Lisbon strategy is essentially targeted to increase the competitiveness of EU Member States. The respective Communication from the EC [The Role of the Universities in the Europe of Knowledge, 2003] calls for a major role of Universities in the making of a European knowledge economy. It is stated that the making of a European knowledge society depends:

- for its growth on the production of new knowledge,
- for its transmission through education and training,
- for its dissemination through information and communication technologies, and
- on its use through new industrial processes or services.

In general, it has been observed that countries in Europe continue to evidence a shift from industrial to post-industrial knowledge-based economies. Productivity and growth are largely determined by the rate of technical progress and by the accumulation of knowledge. Of key importance are networks or systems, which can efficiently distribute knowledge and information. The knowledge-intensive or high technology parts of the economy tend to be the most dynamic in terms of output and employment growth, which intensifies the demand for more highly skilled workers. Learning on the part of both individuals and firms is crucial for realising the productivity potential of new technologies and longer-term economic growth. It is emphasized that the European Union needs a healthy and flourishing university to optimise the processes, which underpin the knowledge society and meet the target to become a 'world reference' by 2010. 130 Given that the current stage and period of economic development is considered to be characterized by the rise of knowledge as the primary source of richness and

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welfare, the availability of high skilled human resources is one of the critical variables that affect its full deployment. The degree to which such highly skilled workforce becomes available at a national level depends on the quality, diffusion and efficiency of the national educational systems, with HE playing a key role. In such a context, recent EU policies (which will be summarized along the report under the umbrella of the 'Bologna Process') are conceived as instrumental to reach Lisbon targets, by both leveraging graduates' employability and by creating an integrated European Higher Education Area (EAHA) for facilitating free knowledge and intellectual capital flow through the EU. In the following paragraphs the way in which the knowledge society has been acknowledged in the NESOR Countries and the way in which the different national HEIs, stimulated by the Bologna reform, did match Lisbon's challenges changes will be summarised.

3.4.1.1 Awareness

The importance of knowledge as one of the most relevant (and accessible) production factors that can explain long-term growth, as well as the availability of young, highly educated people as a critical drive for country economic development, have been found to be two broadly acknowledged issues across NESOR countries, although with different emphasis and quite diverse flavours and instantiations.

In the Netherlands, the leading concept of the discourse on the knowledge society is not 'information society' or 'network society', but 'innovation' or 'innovative power' of the Dutch economy. A knowledge economy is thus acknowledged as an economy with a high share of knowledge intensive industries and services, which are strongly connected with the concept of innovation. The focus in the policy debate is on research that contributes to innovation, rather than on the role of education in itself. As far as educational reforms are proposed, they are often assessed with regard to their social-economic function: in what way and to what degree might they help creating a (future) workforce that is capable to operate in increasingly flexible professional fields and that can cope with the requirements of increasingly innovative economic systems. The Dutch case study thus focuses on the rather big gap that exists between knowledge production by research institutions (HEIs included) on the one hand and practical knowledge application in industry on the other hand. This so-called innovation paradox is thought to hinder the innovative power of the Dutch industry, in particular of small and medium sized businesses. It is the task of the Innovation Platform (IP) to tackle this problem by proposing new policy initiatives to the government. The IP proposes a strategy directed at the whole chain of knowledge, from pre-education until innovation and entrepreneurship. This strategy consists of the following three parts: i) a maximal educated working population during the whole working
career and life course; ii) an outstanding knowledge base, including a prominent research infrastructure and adequate provisions for young scientific talent; iii) creating a stimulating entrepreneurial climate by taking measures with respect to management skills and organizational culture (social innovation), lowering administrative burdens and rules and stimulating innovation by investment in R&D.

The social function of higher education in the social models of the European knowledge society has emerged with changes to the linear model of innovation. The traditional theory held that innovation is a process of discovery, which proceeds via a fixed and linear sequence of phases. In this view, innovation begins with new scientific research, progresses sequentially through stages of product development, production and marketing, and terminates with the successful sale of new products, processes and services. It is now acknowledged that ideas for innovation can stem from many sources, including new manufacturing capabilities and recognition of market needs. Innovation can assume many forms, including incremental improvements to existing products, applications of technology to new markets and uses of new technology to serve an existing market. Innovation, as it is discussed in Austria, requires considerable communication among different actors – firms, laboratories, academic institutions and consumers – as well as feedback between science, engineering, product development, manufacturing and marketing. In the knowledge-based economy, firms search for linkages to promote inter-firm interactive learning and for outside partners and networks to provide complementary assets. Also in Austria, these relationships help firms to spread the costs and risk associated with innovation among a greater number of organisations, to gain access to new research results, to acquire key technological components of a new product or process, and to share assets in manufacturing, marketing and distribution. As they develop new products and processes, firms determine which activities they will undertake individually, in collaboration with other firms, in collaboration with universities or research institutions, and with the support of government. Innovation is thus the result of numerous interactions by a community of actors and institutions, which together form what are termed national innovation systems. Increasingly, these innovation systems are extending beyond national boundaries to become international. Essentially, they consist of the flows and relationships, which exist among industry, government and academia in the development of science and technology. Of key importance is the 'knowledge distribution power' of the system, or its capability to ensure timely access by innovators to the relevant stocks of knowledge. Efforts are just beginning to quantify and map the diffusion paths of knowledge and innovation in an economy – considered the new key to economic performance.

In both countries, the main focus of the debate in turn of the role of higher education in the transition to the knowledge society lays also on the improvement of the national innovation
systems. This element can be found also in other NESOR-countries, but it has a higher priority in these two countries. This specific discourse is probably due to the difference in the expenditure in R&D activities of the higher education institutes. Meanwhile Austria and the Netherlands have an expenditure rate in R&D activities clearly above the EU27-average, the other countries shows a lower rate.

Although the importance of the knowledge economy is acknowledged at many levels in Italy, the Country is slow in adapting itself to the new context and to the new economy. Such delay mainly depends on the fact that both the public and the private investments in HE and R&D are very low. Such low investments, in turn, are caused both by the negative economic trend, and by the fact that 80 to 90% of Italian companies are small-medium ones, with scarce vocation and/or resources for innovation. The Italian society is becoming older, the overall number of young people is constantly decreasing, and, worst of all, they’re not valued as the scarce but precious resource they should be looked at. In general, in Italy, young graduates find a job later than the EU average, earn less, and have more chances to be unemployed or to find a temporary position instead of a permanent one. On the other hand, labour market participation is highly dependent on qualifications, with only 39% of women without a high-school or university qualification are in paid employment, compared to 61% of those with a high-school diploma and 79% of those with a degree. At a country level, the extension of the educational curriculum has still an impact on earnings too. As for the curricula-related discourse (see the Spanish case), in Italy the competencies required by a knowledge-based economy (thus the competencies of knowledge workers) in interviewees’ opinion consist of a balanced mix of technical skills and relational/entrepreneurial skills. While HE has always provided technical competencies, it is hard to think that it could supply the second ones, which are supposed by interviewees as more appropriately acquired through relevant experiences in the cultural and work context.

Although different terms are used for the knowledge society, the most widely used terms in Spain are information society, knowledge society and network society. The government is not the sole actor actively involved in the transformation of Spanish society into a knowledge society, but the national industries too. For example, Foundation Telefónica is actively engaged in the implementation of the knowledge society. Since the year 2000 the Foundation publishes annual reports about the progress towards the knowledge society. Foundation Telefónica defines the term information society as: "a state of development characterised by the capacity of its members (citizens, enterprises and public administration) to obtain and share immediately any information from any place and in the preferred form". According to Foundation Telefónica, the Spanish society is constantly shifting from the production of tangible products towards the provision of intangible services. Such a trend also implies unrestricted technological capacity of access to information resources. As a consequence this new technological capacity will provoke
a profound technology-driven transformation of the Spanish society. As in other European countries undergoing the same transformation, the knowledge society will also be based on knowledge and learning or permanent updating of consolidated knowledge and skills. Apart from industry, during the last decades, Spanish governments and the respective governments of the autonomous regions have put into action several programs to improve the Spanish scientific and technological system. The most recent initiative is the New National Plan 2008-2011. In this plan telecommunication and the information society are jointly defined as a strategic area. The NNP is framed in a more ambitious program called Ingenio 2010 and which contains, for example, the following objectives:

- to achieve in 2010 2% of GDP devoted to R&D;
- to achieve in 2010 55% private investment of whole Spanish R&D;
- to achieve in 2010 0.9% of public investment R&D;
- to achieve the EU-average in % of GDP devoted to ICT’s.

Spain has experimented in the past decades an increment of the students in higher education and of the rate of graduate workers, but in the period from 2000 to 2007 the gross enrolment rate of higher education students as well as the participation rate has decreased. Similar to Italy, Spanish young graduate workers suffer more atypical working conditions than their EU-homologues. But they are still in a better position then the Spanish workers with less qualification.

Italy and Spain can be considered both as countries with a considerable desynchronity of the evolution of the higher education system and the economic system. This situation increments the pressure introducing principles of employability in the higher education system to reduce the mismatch between supply and demand of graduate workers. In this Spanish case, this is accompanied by a public discourse arguing for a change of the social production model towards a model based on high-qualified instead of low-qualified workforces.

Although in the documents that set the directions for the socio-economic development of Poland for 2007-2015, the knowledge society and knowledge-based economy is a key category in defining priorities and specific objectives for further socio-economic development, in general the concept of the knowledge society was not found to be very well rooted in the consciousness of the key actors. To understand this, it is important to realise that Poland, as a rather new accession country of the EU, first of all needs to catch up with the wider social and economic development of other Member States. In addition, institutions of higher education play a marginal role in all strategic programmes. In regional strategic documents, emphasis is placed on economic aspects of the information and communication technologies. No attempt is made to connect ICT with education, training or areas of social development to form one whole –
knowledge society (in fact, the term ‘knowledge society’ is never mentioned in these documents). According to the key local actors, the system of education and scientific research plays only a minor role in the attainment of the Lisbon Strategy. They are dissatisfied with the existing forms and character of mutual cooperation in drawing up and carrying out the strategy for regional development, but they take no action to change this situation. Moreover, their interest and awareness of the role of the education and sciences systems in the creation of innovative economy (term used by entrepreneurs) is rather limited (also among academics).

In Hungary, apart from the 'obvious' optimistic and pessimistic views on the gains and losses of a knowledge society, there is a third influential school of thought, which might be classified as the sceptic view on knowledge society. This group of commentators is questioning the fundamental diffusion of the knowledge and creativity driven economy. On the one hand, in Hungary the competitiveness strategy based on low skills and low wages remains an economically viable development and on the other hand there is also the increasing importance of high skills in the knowledge society, which requires quite a different strategy with respect to education, learning and competitiveness. The main consequences of this sceptic view is that, by mixing both old and new economic policies, Hungarian innovation policies have mainly focused on developing industrial, technology, science and educational policy without the due respect or links with workplace development and investment in workforce skills. Because of that, innovation remains one-sided. As a corollary, important strategic partnerships between government, business and higher education institutions are profoundly underdeveloped.

In Hungary and Poland, the higher education has expanded considerably and produced similar to Italy and Spain. The mismatch between supply and demand stands in the foreground of the public debate on the function of higher education in the knowledge society. In Hungary, this situation conducd to the strategy to use the newly introduced bachelor degree as a selection mechanism within the higher education system restricting the access to the master cycle.

3.4.1.2 National Experiences

The following summary of the national experiences shows how the objectives and the guidelines of the Bologna Process have been received and implemented by the national systems. The major merit has been one of stimulating HEIs to reflect on their function and scope within the national borders, the EU and with respect to the making of a knowledge society. Although, it is important to stress the fact that the EU-stimulated change, crossing the specific histories, cultures and contexts, has generated, as could be expected, different, and, to a large extent, idiosyncratic reflections and experiences in each country.
The **Netherlands** has been one of the first EU-countries in adopting and implementing the major elements of the Bologna declaration on higher education. Within a few years after the start in 2003-2004 more than 80% of all HE-programs were re-arranged in the required Ba/Ma structure. An important explanation for the pro-active behaviour of Dutch HEIs is that *Bologna fitted very well with the ongoing trend of deregulation, decentralization and standardization already going on.* Government is putting itself at a larger distance from the process of education by giving more responsibilities to the educational actors. As a consequence, the system of governance of the Dutch HE-system is changing in a fundamental way as compared to the 'heydays' of the Dutch welfare state. This doesn’t go without criticism, in particular from the side of professionals who fear a loss of quality as compared to the former academic standards. In the Netherlands at least two more or less opposite views exist as regards to the delivery of a substantial HEIs contribution to the resolution of the knowledge paradox, which is indicated as a prominent issue in the HE/knowledge society discourse. In one view both the existing binary system and the way of financing the higher education have to be adapted in a rather fundamental way. In this view, the existing system of higher education has to be de-institutionalised to be able to transform it subsequently from a rather homogeneous system of comparable universities and polytechnics into a *network structure* in which universities and polytechnics are linked by means of high performing research and educational centres. A possible outcome of such a reform would be better skilled and better-equipped students who will be able to deal with large and rapid knowledge growth in society. Also, in this view, the existing rather static way of financing the higher education system has to be adapted substantially. The important basic public financing of universities (the so-called first money stream) has to be diminished in favour of more financial incentives and competition targeted on a better performance of scientists in the so-called re-distributive second money stream. More in general, in this view entrepreneurialism and risk-taking behaviour of teaching and research staff has to be reinforced. Contrary to this orientation, the alternative view is more system-affirming, or conservative. In principle the existing higher education system is performing well by educating to a large extent successfully academics and professionals for which there is demand and need in the Dutch services economy. At the same time, the Dutch universities perform well comparatively with respect to knowledge and research production. Only some adaptations are needed for enhancing and improving in a qualitative sense the output of the system, such as:

- increasing the number of beta-students (physical and technical sciences);
- improving spin-off activities and practical valorisation of academic research;
- preventing the hidden process of integration between universities and polytechnics and, instead of that, reinforce the professional angle of polytechnics.
Parallel with the introduction of the bachelor-master structure, several HE institutes introduced new forms of learning, training and teaching, first on an experimental basis, later as part of the regular curricula. Forms of student-centred, work-based and competence-oriented learning found their way in colleges for professional higher education, where they were applied in particular in disciplines with a strong reflective orientation, like business economics, management sciences, social and pedagogical work, health care and psychology. The new forms usually contained comprehensive reforms of curricular content, design and organisation of programmes, didactical methods, teachers’ roles, student guidance, assessment, and examination. Furthermore, E-learning has been developed more and more in HE institutes, often in combination with these new forms of teaching and learning. However, despite the fact that institutes can benefit from stimulation programmes of the government, E-learning lags behind expectations so far. It is expected that the rise of open-source learning environments will give on-line e-learning new stimuli in the future.

Finally, a new phenomenon in the colleges for higher professional education are the lectureships for applied research, which are sponsored by the government. Lecturers have facilities to organize ‘knowledge circles’ with teachers, researchers, students and practitioners in the field. Lecturers must become a kind of linking pin between their higher education institute and the demand side institutions (e.g. business and public community). This linking should lead to more interactions and a better transformation of knowledge: from education to practice and vice versa. Stronger connections can also improve the quality of educational programmes and the labour market opportunities of the graduates. Furthermore, they can generate extra revenues for the institutes.

The Austrian Universities Act (2002) brought a new kind of autonomy to the universities that coincides with the implementations of the Bologna Process. It is a double-challenging task for universities to deal with their relatively new status and at the same time follow the tasks of reorganisation. In this context, the question of resources and prioritisation is emerging. In general, since year 2002 universities have more (legal, political, financial) autonomy, as now university boards are the sole responsible body for decision-making. By means of so-called 'service agreements', the (public) universities negotiate with Ministry a specific programme, and a corresponding budget. In other words, financing is no longer coming forth by default, but is linked to a plan and performance of each university. This autonomy aims to extend the main goals of European educational policies to the national educational policies. Indirectly the new act also refers to the relation between the Lisbon strategy and national educational policy, by delegating universities to revise their role according to the reaching of the knowledge society. Another point worth to be reported is the importance of the Austrian national culture and philosophy for the realisation of both the European knowledge society and the Lisbon strategy.
The success of Lisbon strategy and the 'project' of a European knowledge society is perceived to depend on a large extent on integrating national cultures and philosophies as an asset and not as a burden, which is of course easier to say than to do. One interviewee stated that “we also compare ourselves to our main competitors. It’s quite obvious that the main potential of Europe is its diversity and we need to integrate this diversity as an asset. However, the risk that it becomes a burden is quite real in Austria”. In Austria there is a national working group on Lisbon where HEIs are members, and there are opportunities for HE institutions to include their opinion in the national strategies for and also on the discussions on the Lisbon Strategy. Finally, it was observed that the design of the curricula at university, is not so important for professors as it should be (they teach what they like, as one interviewee put it) and they prefer to teach what is there own special interest. As a consequence, curricula are not focused on the students and their employability, but more on the Professors themselves and their respective fields of interest.

Since 1999, Italian HEIs have been fully reformed so as to meet the objectives of the Bologna process. The university system is now organised on three cycles. The reform has abolished the old three-year degree (diploma universitario) and the old four-year degree (laurea) and has introduced new academic qualifications organised in three cycles. The Italian case study reports the Country's experience focusing on some unresolved issues in the change of the national HE system. Although the recent reform has lowered the rate of students who don't complete their curriculum in the due period, there's still a lot to do to reduce graduation delays, given that i) one year of courses still corresponds to 1.49 year of permanence inside the university; ii) the 37.5% of 'new' students conclude the triennial course with one year delay and the 24% with a two year delay; iii) the comparison between 2004 and 2005 first level graduates evidences a negative trend, with the share of students completing the courses in due time severely decreasing, summing up to a minus 61% (the 'regular' students decreased from a 2004 83% to a 2005-6 22%). Two specific criticalities, which could explain those negative outcomes, were pointed out. First of all, HE reform has been criticized mainly for having been implemented i) too much centrally, with new curricula having to comply with rigid ministerial tables; ii) without the necessary extra funding and appropriate labour market demand studies; iii) too much rapidly, with the consequence of students having to attend to too many classes and exams. Secondly, the national HE system is affected by the problem of 'unmanaged diversification'. The number of degree courses has exploded too, summing up to 5,500 and being 'only' 2,300 before the 3+2 reform. The growing proliferation of degree courses, which study plans and titles are hardly interpretable by economic and social actors, negatively affects the effective dialogue firms-university and territory-university, thus lowering HE contribution to the making of the Italian knowledge society.
Finally an experimental initiative in Italy is the apprenticeship in higher education launched in 2003. The higher-level apprenticeships are contract based on contracts, oriented to the obtainment of a higher education certificate and managed at the regional level by the regional authorities, trade unions, business organisations and higher education institutes. It is based on the alternancy between on and off the job training and includes courses at higher education institutes, individual studies, formal and informal on the job training and work experience. It application is restricted to persons aged between 18 and 29 years. At the end of the apprenticeship, the contract turns into an open-end work contract. The higher-level apprenticeship program is still in an experimental phase with applications in some regions. In so far it needs still a detailed analysis to determine if it has been successful. But it seems that the regions as well as the social partners and higher education institutes haven’t fully accepted this initiative due to a lack of cultural preparation and there is only a limited debate about the higher-level apprenticeships.

As in other countries, the Bologna process did promote in the first instance a structural reform of the Spanish higher education introducing a three-cycle-system based on the 4+1 principle in respect to the first two cycles (bachelor and master). The reform can be interpreted in the following way: the professionalisation, which takes place in the 1st cycle, is conceived as more relevant for the Spanish society than the 'academisation' assigned to the 2nd cycle. However, the fact that the decision for the 4+1 cycles has been taken in the year 2007 is a clear indicator that the Spanish higher education system is still in the process of adaptation to the new curricula structure. In such a context, the role of the academic staff is conceived as a crucial factor for the successful implementation of the Bologna principles. As for the Polish case, The Spanish study mentions the insufficient funding of higher education: in spite of the fact that public expenditure in higher education has increased in the last years above the average of the general public education expenditure, the Spanish public investment in higher education is still far away form the EU-average. With respect to the experienced changes in the roles and functions of universities in Spain two reports are important. These are the so-called Bricall Report and the 2004 report of the Conferencia de Rectores de las Universidades Espanolas (CRUE). The Bricall Report addressed the issues, which are related to the implementation of the Bologna process in Spain. According to this report a deep transformation of Spanish society is required toward a situation in which not only the quantitative growth of higher education is at stake, but also a change of quality. The higher education system has to be more oriented on the needs of the labour market, towards professional training and towards life long learning. Continuous training and education has to be integrated in the educational programme of the universities. This also implies the introduction of new forms of learning, such as the binomial ‘education-learning’, newly designed flexible curricula, and the introduction of practical
modules. Another point stated in the Bricall Report is the need for more funding and improvement of the links between the higher education system and enterprises and technology transfers. According to the Spanish Country Report a weak point of the Bricall Report is the fact that it overlooks the precarious position of the knowledge workers in the higher education system with respect to fixed employment and income security. In the stream of the Bricall Report, the implementation of the Bologna Process in Spain relies on two main pillars. The first pillar concerns the reorganisation of academic titles. The second pillar regards the innovation of the teaching process alongside the paradigm shift from teaching to learning. In a second report issued by the CRUE, the rectors firmly underline the need to strengthen the Spanish university system with the use and application of modern ICT and communication technologies in the context of the knowledge society. The university system needs to be able to catch up timely in a pro-active way with the development of Spanish society towards the knowledge society. The rectors report pleas for the application of ICT’s in four main functional areas: training, research, services to society and management and administration of the universities. Crucial will be the growing virtuality of the learning spaces, requiring major changes in the organisation of learning and teaching activities. As already mentioned, the adaptation to the Bologna process in Spain implies to rethink which are the learning modes in higher education. The traditional concept of the Spanish higher education considers fundamentally two learning modes: theoretical lectures and practical classes, as laboratory work or fieldwork. But the Bologna-driven shift of emphasis from teaching to learning obliges to take in consideration other modes of learning too and to conceive the learning process in a global way. In Spain, the quest is for the massive introduction of innovative didactic methods, which are not based on lectures. The traditional Spanish credit system was based on the calculation of lecturing hours. The general implementation of the ECTS-system based on learning efforts requires to rethink the relations between teaching and learning. Furthermore learning modes are being distinguished in presence and non-presence activities. The first ones are based on the presence of lecturer and learner in a same time-space as for instance theoretical classes, practical classes in laboratories or tutorials. The second ones are these learning activities, which the learner can develop independently and autonomously learning alone or in a team. Taking into consideration the plurality of the learning activities in the design of the study programme requires to rethink the relations between teaching and learning, and the learning/teaching methodology. To enforce these changes, it is also claimed that lecturing will form part of the evaluation of the professional performance of the academic staff, which is until now mainly focused on the research activities.

One additional focus of the Spanish experience is centred on the relation between higher education and the labour market. This debate is centred on the thesis of an over-supply of graduates and a mismatch between the competences transferred by the higher education and the
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professional competences required by the labour market. On this background, Spain has initiated within the Bologna process a deep reflection on curricula integration and the transfer of transversal competencies. The competence approach as it is used in Spanish higher education starts from the same principles as the competence approach in vocational education and training. However, this possible interrelation is not widely discussed in the higher education system itself. But the use of such an approach indicates the will to bring higher education closer to the requirements of the labour market and to open the possibility for a continuous adaptation of the curricula. The focus on learning processes and competence development requires, in principle, a planning based on teamwork between the persons and areas involved in competence development. Generally the competences to be developed go beyond the borderlines of the established academic fields. For this reason, it seems reasonable that the planning of the learning processes has to be interdisciplinary. That requires the creation of University structures besides the traditional work division through academic fields in faculties and departments. One of the main challenges of the process is the adaptation of the lecturer profile to the emerging environment. The new profile is probably very different to the traditional profile of an academic lecturer. First of all, university lecturers are, until now, specialist in their academic discipline. In the new University environment, they must know and transmit also general competences (team work, search of information…) and specific professional competences. The academic staff shall have the role of catalyst and activator of the learning process. Independently of the didactic methods used, the most important element of the learning process is the personal relation between the student and the professor and between the students themselves. Lecturers must have the adequate competences to accomplish their function in the learning processes, e.g.:

- knowledge of the learning processes of students within the natural and academic context;
- planning of the study programme and the didactical interactions;
- use of the adequate didactical methods and techniques;
- management of the didactical interactions and the relations with the students;
- evaluation, control and regulation of the learning process and of the own teaching process;
- knowledge of the legal and institutional norms which regulate rights and obligations of lecturers and students;
- management of one's own professional development as a lecturer.

Finally, it is worth mentioning that ANECA - the Spanish Agency for Quality in Higher Education - has elaborated a guide for the procedures to elaborate study programmes and to assign credits to their elements based on the following recommendation:

- all the professors, who are teaching in the different knowledge areas included in the curricula, should analyse together which learning activities are required for each of the
components of the study programme. A commonly elaborated proposal based on a global vision shared by all professors could avoid overloading the learning activities of the students within the study programme;

- it is recommended to include complementary activities as conferences, seminars, working sessions, etc. to achieve the goal of an integrated training.

In **Hungary** the implementation of the aims laid down in the Bologna Declaration has been carried out in a rather contradictory way. Till the 90s the Hungarian HE system was prepared for training the elite of the population. The methodology and the teaching technology were designed for the upper 10% of the population. In the former system of Hungarian higher education which was based on the 'Prussian tradition', which exactly prescribed what kind of courses have to be learnt to each diploma, what kind of exams have to be passed (to a credit level), etc. In contrast, the new system focuses only on the output side, i.e. what kind of competencies are necessary to obtain a given diploma and the question of how can these be achieved has to be solved by the polytechnics and universities themselves. The shift from an elitist to a mass-education was thus not followed by an appropriate transformation of the pedagogical methodology. *The strategic and instrumental goals of the reform were not integrated. The emphasis has been put on the technically feasible elements of the restructuring: introducing the credit system and the two-cycle education model with a relatively little respect to the content of the changes.* The representatives of the firms and other social actors were not involved into the creation of the new two-cycle programmes. *As a result the creation of the programmes' content remained supply-driven*, e.g. the number and content of the programmes reflect the existing capacities of the universities and polytechnics and do not correlate to the real labour market demands. The system of higher education is insufficiently demand-driven and doesn’t anticipate the needs and demands of the changing labour market. Only recently, in particular polytechnics, are attempting to change by developing stronger ties with the business community and the public administration. The newly implemented bachelor degrees are oriented to teach academic skills rather than to the practical knowledge. The Hungarian higher education system contains a structural weak points which prevents a habile fit with the development towards the knowledge society:

- too strong state intervention, even in case of private universities, with respect to annual financial contributions;
- corporate governance of higher education system lacks real owners;
- universities have no autonomy in their asset management and they don’t have significant freedom in the field of HRM-practices;
- Endogamy.
Another problem is that in Hungary, similarly to Italy, there is an extremely high number of higher education institutions, which looks fragmented. Inside this large group of higher education institutions strong differences can be noticed. Four groups can be distinguished:

- Universities which are competing at the international level; with the exception of Budapest this level is missing in Hungary;
- Regional Universities which have the ambition to compete with the largest national universities located in Budapest;
- a third cluster of universities that wish to be a knowledge centre of their region and that want to play a role as engine for the regional and economic development;
- a group of small polytechnics and universities that take care of training of the local intellectuals.

Finally, it has been noticed that the undergraduate system is very rigid, containing a large number of overspecialised programs contradictory to the strategic aims of the Bologna Process.

In Poland, expenditure on education is experienced as insufficient, while the number of higher education institutions is too large (over 400). As a result, the quality of education is unsatisfactory and it is too slow in responding to market needs. There is no vocational counselling or information on the requirements of the labour market. The local government, schools and businesses fail to cooperate with each other. Universities cannot really design study curricula as they wish, because they have to comply with 'minimum standards'. Strategies, government and department programmes are perceived to be only makeshift, provisional, and politically controlled answers to the EU directives and recommendations. Each new Cabinet presents its own political programme how to repair education. But such programmes never reach their implementation phase as each Cabinet, sooner or later, is replaced with a new one, and there are a number of more important things around anyway.

3.4.1.3 Future strategies and recommendations

Although acknowledged as a relevant topic throughout NESOR case studies, the concept of knowledge society/economy seems to be of scarce practical usefulness and quite segregated in high-level expert and policy-making discourses and documents. In some cases (e.g. the Netherlands and Austria), the keyword that seems to be used with much practical implications is 'innovation' - that is, the production and transfer of knowledge that has a positive impact in terms of new products, skills, and production processes. In many cases, the structural reform in the higher educational institutions has received a great impulse by the Bologna process. Indeed, until now, it is rather difficult to fully assess the impacts of this structural reform, due to the
lack of necessary time perspective. At the same time, the documents analysed during the NESOR research and the opinion of various stakeholders called attention on some shortcomings of the reform. As a major drawback, the reform was implemented without the necessary prior experiences-testing phase. In addition, the specific objectives of the Bologna declaration were sometimes introduced in an inconsistent and piecemeal way, i.e. curricula were redesigned according to the requirements of the BSC and MSC, however, the governance and performance evaluation of universities did not change, the labour market actors were not involved in the design of the curricula, etc. What it is missed in the debate in different countries is the discussion of the link between higher education and research and the double role of the academic staff as lecturer and researcher. In other words, as well as at the European level, the discussion of the role of the universities in the European knowledge society should probably be advantageously separated in two dimensions: research and education. However, the interrelation between both (which deeply affects university's staff load and effectiveness) is generally not discussed. At least in some cases, NESOR HEIs seem to have been experienced some of the concepts and guidelines of the European Policies as constraints and obligations to be fulfilled instead of real opportunities for a serious reflection on their role and programmes. Looking into future prospects, EU HEIs thus, might and should take a more active role, trying to enforce their original and peculiar function in the making of a Country's welfare (and of a European knowledge society) to get back their role of respected and influential guides of the (knowledge) society they're acting within.

Recommendations:

- At least in some countries, HE needs fine tuning. After the frantic period of change which has followed the reform and has sown the proliferation - to some extent arbitrary - of new courses, the educational offer has to be simplified and the regular monitoring of the effects of the recent changes should be enforced to avoid unmanaged diversification and excessive fragmentation of the educational offer.

- The political-institutional surrounding that governs and influences some HEIs should be less affected by bureaucracy and centralized decision making, which does not fit with the growing HEIs need for flexibility and rapid, dynamic adjustment to the knowledge society.

- In many Countries, the dialogue between HEIs, labour market and local authorities, under a shared vision of sustainable development, is in need of enforcement and innovative mechanisms of participation and strategic partnerships.

- The discourse on the knowledge society in EU, as the Dutch case shows, could probably benefit by focusing on research that contributes to innovation, rather than on the role of
education in itself. This will contribute to limit the risk that the system of education and scientific research plays only a minor role in the attainment of the Lisbon Strategy and the diffusion of sceptic views (e.g. Hungary).

- To avoid that excessive emphasis is put on the technically feasible elements of the reform (credit system and the two-cycle education model), with relatively little respect to the content of the changes, new forms of learning, newly designed flexible curricula, and the introduction of practical modules (as in the Spanish case experience) should be further promoted.

- As mentioned in the Spanish case study, taking into consideration the plurality of the learning activities in the design of the study programme requires to rethink the relations between teaching and learning, and the learning/teaching methodology. Truly innovative learning settings are not yet general practice, but are implemented in certain study fields (e.g. Economics) and national cases by individual teachers, or at smaller (and younger) universities. Some experiences such as lectureships for applied research as well as 'knowledge circles' (the Netherlands) could be further extended as pilot innovations in other EU HEIs.

- An adaptation of the lecturer profile (new competences to accomplish his function in the learning processes) to the emerging environment and the recent reform is required. Learning opportunities should be provided to the teaching staff in order to update teaching methods, contents and profile and thus being better aligned with the new educational structure.

3.4.2. Higher Education and new social risks in the age of knowledge

Any change in the production mode implies the emergence of new social risks (e.g. inequality of chances and outcomes) and it is one of the major thesis of the NESOR project that the EU-wished advent of the knowledge society/economy will not be an exception. The flexibility required by the new labour market, for example, has extended to a great deal the precariousness of large segments of the workforce. Universities, through their expertise on and insights into society and economy, have a higher awareness of the new precarious labour conditions, both for young graduates and for the research and teaching professions themselves. Unstable and often unfair employment and collaboration conditions for university employees and freelancers were found as a common practice across the NESOR case studies. The traditionally high societal status of university employment often pushes young researchers and lecturers to accept working conditions they would otherwise not accept. In other words, there might be cases where universities – instead of displaying a higher awareness for social risks – even take advantage of
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the new risks on the labour market. Such debate extends to young graduates for which the term '1.000 Euros workers' has been coined, and points out one of the main controversial effects of the advent of the knowledge economy, having relevant consequences both on individuals' welfare and on EU social cohesion. In this respect, HEIs are still in need to develop educational content, which prepares graduates towards flexibility, which relates to the shaping of curricula in a way that people 'learn to learn'. One of the main challenges that confronts higher education institutions is preparing students/graduates for the use of acquired knowledge and enabling them to integrate into the labour market. Such education is especially important during Bachelor’s degree programmes and Master’s degree programmes. Usefulness of the diploma is an obvious and long standing challenge for HEIs. It is also associated with a certain risk. Choosing a field of study, students are motivated by different factors, but they (as well as their teachers) cannot really predict the situation on the labour market at the time of their graduation in a few years’ time. Tensions between the professionalisation of studies (responding to the needs of today’s labour market) and the future socio-economic needs are unavoidable. It seems that these tensions may be alleviated by introducing more flexible teaching curricula and by the development of lifelong learning offers. LLL is a quintessential aspect of the knowledge society, in fact, as Nielsen & Lundvall [2003] argument: “The learning economy concept signals that the most important change is not the more intensive use of knowledge in the economy but rather that knowledge becomes obsolete more rapidly than before; therefore it is imperative that (firms) engage in organizational learning and that (workers) constantly attain new competencies [...] half of the skills a computer engineer has obtained during his training will have become obsolete one year after the exam has been passed, while the ‘halving period’ for all educated wage earners is estimated to be eight years”. Paradoxically, high human capital can still mean unemployment if graduates are not prepared to undergo constant re-training, learning and updating, through continuous self- and HE-provided life long learning, defined as “all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within a personal, civic, social and/or employment-related perspective.” Lifelong learning includes therefore all possible stages of learning from pre-school to post-retirement, at all possible forms from formal learning to non-formal and informal learning. It establishes a relation between the acquirement of knowledge, skills and competence and the social and economic performance of the society. It includes also a switch from the teaching paradigm to the learning paradigm. LLL is a new and not always clearly defined (as it emerges from NESOR research evidences) task of higher education, which involves not so much an improvement in access to studies for working and older people, but the provision of short, one and two-terms courses to enable individuals to update their professional skills or to retrain for a different job.
3.4.2.1 Awareness

NESOR research has showed that, although with different degrees, some well known social risks (e.g. gender inequalities) have been mitigated by an enlarged access to HE. However, on the side of the 'new social risks', the emerging economical context has had critical effects on graduates' job security, which, in turn, in medium-long term could have negative consequences on national and EU-level social cohesion and inclusion. In such scenario the fact that LLL provision and implementation by the investigated HEIs is unsatisfactory stands out as a particularly negative evidence.

As for the Netherlands, a number of problems are acknowledged as key social risks specifically connected with the rise of a knowledge economy: a) insufficient and unequal access to knowledge for certain groups; b) weak national commitment to lifelong learning; c) an increasing gap between low and high educated workers; and d) critical labour market transitions during the life course. Recently, an extensive thematic review of Dutch tertiary education carried out by the OECD showed considerable deficiencies in the participation of ethnic minorities as compared to nationals [OECD 2007]. Ethnic minorities, actually, do not only participate less in the tertiary educational system, but also perform less. In particular, completion rates for non-western immigrants are lower than for other population groups. In addition, once ethnic minorities take part in tertiary education, they have a strong preference for polytechnics and much less for universities. This form of undesired segregation may be the result of selection processes that already start in primary and secondary education. The transformation of the welfare state into an activating participation society for the moment is not beneficial for the low educated working and unemployed people. Despite a decrease in the supply of low educated workers on the labour market in a context of a stable or even increasing demand of low educated workers, the socio-economic position of the low educated workers did not improve across a longer time span, as might have been expected. Chances to become unemployed are twice or even three times higher as the chances of the high-educated workers. An additional problem in the Netherlands is that the majority of the courses offered has a functional and applied character and doesn’t really contribute to the acquisition of legally recognized certificates or diplomas. Therefore, their significance in terms of investing in sustainable life long learning activities is still rather limited. The tertiary system is focused on the age group 18-30 years old and almost doesn’t serve older age groups. The Dutch study also points to new social risks for higher educated people. In particular, a neglect of the need for employability and life long learning in increasingly flexible labour markets would be harmful for positions and careers of higher educated graduates in the future. Although their position is
not really precarious in the long run – the share of students having a job at an adequate qualification level five years after graduation is higher than EU average – there are signs that risks of precariousness might increase, especially for graduates that have long lasting temporary jobs or jobs with high degrees of specialization.

In Austria, it is clear that HE institutions have a role regarding the social dimension, but, for example, they see the implementation of equal opportunities as a main responsibility for the government and industries, and not so much with their own institutions. Most one can see on equal opportunities is regarding special services on quality of teaching provision and involving students therein. At the same time, from a legal and policy point of view, it is found that the Bologna process is considered as highly relevant in the national HE policies. The results of the corresponding national reform processes are inspired from and are compatible to the Bologna guidelines. According to the Austrian Federal Ministry for Sciences and Research, lifelong learning appears as one of the main issues of the Austrian Higher Education institutions: “HE institutions in Austria see lifelong learning as a high priority, some universities already have strategies and cooperate with public education institutions and offer courses jointly”. According to the Ministry, most universities offer lifelong learning programs to their own graduates, but some started also to be responsive and give access to teaching and learning offers to other parts of the society, e.g. by creating new special continuing education offers, especially in the evening or sometimes on Saturday, to make it possible for adults and otherwise employed people to enrol in such course.

The social system in Italy is pressed by old issues, like the historical breach between northern and southern part of the Country. For example, in a ranking of the most profitable economic activities, the first twenty positions are occupied by activities based in the North and in the Centre. On the contrary, activities based in the South occupy the last ten positions of the ranking. Furthermore, unemployment is more than doubled in the South compared with the national average (about 19% vs. 9%). The situation in Italy appears particularly critical given that Italy is one the EU countries with the largest public debt and a number of negative socio-economic indicators. The Italian system: i) has a rate of young unemployment 17% higher than the average for OECD countries; ii) has the longest school-to-work transition of the OECD countries; iii) has a population of students who complete their higher education considerably later than other European countries (27-28 years, compared to an average of 22-23); iv) has investment in training and education and levels of lifelong learning among the lowest in Europe. As for gender inequalities, in a survey of 58 countries, the World Economic Forum found that Italian women rank 48 for the degree of participation to institutional life, and 51 for the degree of participation to the labour market. On overall, the groups more exposed to risks of social exclusion are considered the following: women, people located in southern Italy, young, first-
level graduates, and those with scarce linguistic/informatics skills. On the side of the emerging social risks, in Italy occupational stability is more and more difficult to be reached both when measured one year and five years from the degree. Job precariousness has had the effect to extend the dependence of young people from their families, thus delaying the entrance of young graduates in the marketplace and putting the burden on families, which continue to remain the only shelter. Job insecurity and the general decrease in entry wages and high costs of housing undermines young people' capability to develop the network of relations that is essential to find a job, and/or to exchange experiences and develop self-initiative. Precariousness affects younger researchers and the teaching staff too. Many degree courses have been opened with a minimal percentage of permanent teachers, hiring a lot of external, part-time teachers, and thus lowering the overall quality and continuity of services provided by Universities. On the side of wages, a recent research underlines the fact that, in the last five years the purchasing power in Italy has decreased of 1.900 Euros. Social inequalities have deepened, with a growing difference between the 10% richer and the 10% poorer part of the population. For instance, salaries of managers compared to low-level employees raised from a ratio of 3:1 to a ratio of 4:1. Employers and autonomous workers have seen their salaries raising of about 12.00 Euros, whilst employees and factory workers have seen a significant decrement (3.000 and 1.600 Euros less on average respectively). 7,3 million of workers in Italy earn less than 1.000 Euros, 14 million less than 1.300. The share of workers who find an underqualified job is growing: 3,7 million of workers fail in finding an occupation aligned with their studies, and many of them are university graduates. In such a context, the effectiveness (in terms of employability) of the first cycle degree is raising many critics. The 3+2 system was reported as having not yet been fully deployed/received by Italian employers, with the shorter (first level degree) permanence in the HE system being perceived as an insufficient qualification. As a consequence, there's a much higher than expected share (64%) of first-level graduates who decide to continue their studies, with a consistent share (over 30%) motivating their choice on the feeling that their certificate is insufficient to get a job. In sum, Italian young graduates still find a job later than the EU average, earn less, and have more chances to be unemployed or to find a temporary position instead of a permanent one. Although the Italian labour system evidences a delay in the amount of competencies of adult workers, LLL continues to lay behind the desired targets, enforcing social inequalities:

- the 'Adult Literacy and Life Skills' survey shows that the 80% of Italian citizens is below the minimum level required to operate within contemporary labour contexts;
- only the 6,2% of people aged 25-64 (that is those people who should theoretically be active on the labour marketplace) attends to LLL initiatives, a share that is well below the EU 25 10,8% benchmark.
only 47.2% of people aged 25-64 holds a high-school diploma, against an OCSE 65% benchmark.

The access to LLL seems more and more restricted to the 'strong' portion of the population, with the progressive marginalization of the weak segments (young workers, temporary employed; low qualified; over 45; etc.). The typical individual, who attends continuous training and educational courses in Italy is a male between 26 and 40 years old, with a job and a diploma. The attendance to LLL initiatives is strongly correlated to workers' educational level, and to workers' position in the organizational hierarchy, with the higher positioned (managers) showing the highest attendance (54.7%) and distancing shop-floor workers of a striking 38 percent. In practice, such a situation means that training and education in Italy work just for those who already have had some, enforcing the social exclusion loop, with women and elderly being severely penalized.

As for the Spanish case, attention is drawn on the discussion about the failure of the higher education system to promote social class equality. Along the primary and secondary education, which is compulsory, the public educational funds are better distributed between the social classes. On the contrary, the non compulsory higher education is still characterised by the uneven participation of the social classes: only a minority of the students is coming from the lower and lower middle class. This implies an uneven distribution of the public higher education funds among social classes. The gender risks (in quantitative indicators) seem to have been resolved in respect to the access to higher education provisions. The female students' rate is in generally over 50% except in some specific areas like engineering. But a gender risk is still recorded in the professional careers within public and private organisations (caused, e.g., by life course decision or events like motherhood, child care needs, elder care needs etc.). The question here might be whether higher education can provide flexible lifelong learning support for this specific social risk groups (which shouldn’t be restricted to women).

In the Hungarian case study, the interviewed stakeholders indicate that the massification of the Hungarian higher education has weakened some major social inequalities. The share of students in higher education (in the % of high school graduates) has increased from 30 percent in 1990 to 75 percent in 2002. However, a deeper analysis of the transformation process in the Hungarian higher education system indicates that social inequalities have been reproduced in a more sophisticated way. Simultaneously to the high-speed increase of the university students, the number of higher education institutions and their diploma did also multiply. As a result of this process the same degrees represent significantly varying qualities. For example, thirty-five higher education institutions are issuing diploma in economics representing unequal professional qualities and employment opportunities.
In Poland social actors are aware of the fact that the biggest social risk, in the context of the upcoming knowledge society is not sufficiently and at the same time not timely being able solving the socioeconomic backwardness of the country. That is: mastering the problem of unemployment, increasing the innovative capacity of the economy, increasing the mobility of the labour force, to include a large number of different socially excluded groups, and to remove the shortcomings of the system of education. More in detail, research has highlighted the following risks:

- Degradation of human capital – surplus of highly qualified workforces who work below their qualifications, accepting worse conditions of employment (and lower pay) in order not to fall out of the labour market and avoid unemployment.

- New area of frustrating inequalities caused by unemployment of people with higher education (studies indicate that 10% of new employees are recruited from among graduates of general secondary schools and institutions of higher education, whereas 90% of new employees are recruited from among graduates of vocational and technical schools).

- Emigration of educated people. In the public debate in Poland, this emigration is mostly discussed in terms of the loss of human capital (‘brain drain’).

- Digital exclusion caused by insufficient access to new information and communication technologies, which mainly affects people with poor education. According to Social diagnosis 2007, as many as 67% of people with primary or lower education do not use the computer, the Internet and the mobile phone and only 3% of them use all these new technologies. In comparison, 73% of people with higher and post-secondary education use the new technologies (and 81% of pupils and students, although 7% do not use them at all (and only 1% of pupils and students).

On the side of LLL, the recent OECD study “Thematic Review on Adult Learning” demonstrated that Poland, in comparison with other countries participating in the study, has one of the lowest rates of adult participation in lifelong learning, along with Mexico, Portugal and Hungary. Studies on lifelong learning demonstrate that only the twenty percent of economically active people in Poland has an opportunity to develop in their chosen profession, while others must retrain for a new job. Every employee in Poland participates, on average, in two hours of supplementary training, in an organized form, compared with between 50 and 70 hours in other countries of Europe. In Poland, 41.4% of employees takes part in lifelong learning. Most often, these are employees of large (77.9%), medium-sized (58.6%) and small enterprises (36.4%). The largest number of employees who supplement their education are those aged 25-44 (70.3%). The level of expenditure on education and upgrading of qualifications of adults is still unsatisfactory. It is estimated that budgetary expenditure on lifelong learning in Poland accounts
for about 0.6 per cent of total outlays on education. Expenditure on training, vocational development and retraining of human resources in 2001 amounted to only 0.8 % of all labour costs incurred by employers.

3.4.2.2 National experiences

On the side of social cohesion, equality and, more in general, the facing of new social risks, NESOR HEIs reactions (especially in terms of wide and continuous life long learning opportunities), as already mentioned, seem episodic and rather weak. In other words, social risks don't seem to have been effectively tackled by the recent Bologna changes (while being to some extent successful in extending the number of graduates and in promoting internationalization). However, innovations and substantial initiatives, although occasional and locally nested, are not completely absent, with the Netherlands standing out as for experimenting, monitoring, and implementing innovative practices. The jobs of today are changing: informatics, molecular biology and genetic sciences, cognition management systems, and international finance, visual communication design, mechatronic, EU studies, electronic and communication engineering, software engineering, finance market studies. For adapting the various educational systems to the new challenges, European HE institutions can provide several examples and many of the newly developed BA/MA/PhD programs (due to the switch to the three-tier system under the Bologna requirements) are examples for that. Irrespective of particular cases, in general, HEIs policies which promise to actively contrast social inclusion and further promote equal opportunities, as already mentioned, are not that widespread, although the discrepancies among institutions, nations and regions suggest a cautious approach when making general judgements.

Contributing to the employability of graduates on future labour markets is generally seen as important in the Netherlands. At the same time the system is, at least formally, is open and accessible for everyone who has the right qualifications. Nevertheless, as OECD-figures turn out, the Dutch educational system contains unintended segregation aspects. For instance, women much more often go for the humanities and the social sciences and are clearly underrepresented in the natural sciences. Ethnic minorities more often go for professional education instead of academic education and, in addition, perform less successfully than born nationals. Nonetheless, various experiences and programmes for enforcing employability and mobility of graduates have been reported:

- More flexibility in the design of learning trajectories. Programmes get a more modular structure, with the emphasis on specific (blocks of) courses. Students get more opportunities to design their own learning route. They can follow courses in other disciplines, at other
institutes, within the framework of common agreements about the general curricular structure and content.

- Programmes with broad bachelors and further differentiations in the master phase. These differentiations might also cross traditional boundaries and thus provide better fits between qualifications and labour market demands. Differentiations usually have been developed after consultancy of actors in the professional fields of the disciplines and on the labour market.

- Innovations in curricular design, programming and learning practices have led to a certain upgrading of the role of teaching in academic practice. Though research performance still is the main reference point for accountability of HE staff, teaching has gained status. In many universities and polytechnics there are special career lines now for teaching staff, partly distinguished from tasks, performances and career lines in research.

- Policies and practices to improve connections, such as: entrepreneurship in HE programmes; small business centres at HE institutes; lectureships for applied research in HE institutes; start ups and spin offs; establishment of research networks; contract research and consultancy services; mobility of researchers.

- Various curricular reforms anticipate on a possible future paradigm shift from education to learning, such as programs and experiments with dual learning, competence learning and digital learning.

- The use of digital learning has been promoted strongly by the government. It has been taken up by the HE institutes, but to varying degrees and with results so far lagging behind what was expected. Probably, digital learning will get new stimuli from the rise of open-source learning environments in the future.

Beside that, the Innovation Platform (IP) elaborated several concrete proposals to stimulate life long learning in a strategic Knowledge Investment Agenda 2006-2016. Apart from further differentiation of education programmes, levels, and financial contributions, the IP proposes among other things:

- accessibility of study grants up to the age of 30 years;
- legal recognition of procedures for validation of prior, non-formal learning;
- stimulation of dual learning in medium and higher professional education;
- individual financial aids for employees to stimulate investment in further training;
- extra attention for groups lagging behind, like migrants, low income groups and 30+ age.

Finally, the Council for Work and Income and the National Initiative Life Long Learning have launched an action plan to stimulate the creation of more demand-oriented 'second learning
routes' and to stimulate actual participation of adults in these routes. To reach this objective, a further demand-driven development of the market for post-initial education is needed, with more tailor made trajectories for medium and higher qualified employees and better opportunities for the recognition and validation of prior learning e.g. learning outside the educational system. The initiators have elaborated a number of measures to stimulate such an open infrastructure for life long learning:

- at the demand-side (companies, employees, unemployed): development of adequate provisions for career guidance of employees and unemployed; development of adequate facilities for training of employees, unemployed, special target groups;
- at the supply-side (education and training institutes): development of flexible qualifications and learning routes; development of collaboration with the demand side in open networks with innovative and flexible combinations of learning and work;
- mutual consultations between actors at the demand and at the supply side in regional and sectorial platforms; consultations should aim at a better articulation of the demand and at the initiation of new demand-driven life long learning trajectories;
- a national framework for the recognition and validation of prior learning and for vocational and professional qualifications, which supports the quality, transparency and compatibility of public and commercial education programs;
- financial arrangements supporting second learning routes for adults, for instance as proposed by the IP.

The discussion on the changing role and functions of the higher education system in Austria focuses on two main points. First of all, the Austrian higher education system is developing programs that contribute to the improvement of the employability of students and alumni. Secondly, in the last five years under the aegis of the Bologna declaration far-reaching adaptations of the educational curricula have been implemented with the intention to fill the gap between supply and demand. Until recently the main objective of the Austrian higher education system was the increase of graduates because of a structural lack of these on the labour market. Currently, the lack of professionals has been solved and the nature of the problem has moved towards the employability of graduates and the need to improve the growing mismatch between supply and demands of the higher educated. Apart from numerous adaptations in the curricula, universities have implemented tracking systems to monitor what is going on in terms of actual labour market developments and educational offers (including life long learning). In terms of curricular adaptation to cope with changing labour market conditions, some institutions include new lectures about law topics and, mostly, economic issues which are supposed to increase the employability of the graduates. According to most interviewees, these are the most frequent
forms, and, in the opinion of the Austrian Federal Ministry for Sciences and Research “several universities are actively working on new courses to increase graduates' employability”. One obvious example of such new course offers would be e-learning (or b-learning), with several e-learning degrees currently available. On the other hand, there have been curricular innovations of various sorts, which, however, have been reported to be still at an experimental level. There’s a lot of learning-by-doing and several but isolated experiments in universities regarding this issue. In addition, universities are reforming not just the curriculum but also the organisation and structure of the universities, including new departments, and also trying to have more interdisciplinary and trans-disciplinary offers. It was quite an effort to come up with new profiles for the graduates, both for the Bachelor and for the Master degree, and the Bologna Process Commission is making clear that the Bachelor and the Master degree should be relevant to the labour market.

In Italy, the self-referential attitude of the teaching body is pointed out as a problematic issue. In general, it is felt that the Italian higher education system runs programmes that tend not to reflect the needs of enterprises and the surrounding territory but, above all, the teaching interests of the various faculty member. Country-level initiatives on LLL can be usefully divided in two different groups: those performed on a collective basis and those performed on an individual basis. A major drawback of LLL collective actions lies in the scarce information and knowledge that companies have of the available funding schemes (which reflect an insufficient attention/interest in LLL and result in the under exploitation of LLL opportunities). The most recent collective LLL actions include: the Territorial Permanent Centres and the Multisectorial Training Funds. Individual LLL initiatives differ from the collective ones in that the decision to attend to a certain course is taken by the adult himself, without the approval of labour givers and within a set of given opportunities. The motivation to initiate such support actions is based on the acknowledgment of the fact that the interests of the single workers could be different from the needs of his/her company. Consequently, the individual right of defining and nurturing one's own competencies (which can be useful, for example, to empower one's own mobility and to anticipate and exploit labour market changes) is fully recognised. Currently, two main programmes are running to provide LLL at an individual level: i) educational vouchers and ii) individual learning account. A recent research has elaborated a map of 'idealtypes' that captures the different approaches that the Italian HE providers adopt to face the challenge of LLL:

- inadequate LLL awareness: scarce strategic value attributed to LLL and insufficient LLL practices;
- weak LLL awareness: scarce strategic value attributed to LLL and sufficient LLL practices;
- adequate LLL awareness: positive strategic value attributed to LLL and good LLL practices;
• strong LLL awareness: high strategic value attributed to LLL and good LLL practices.

Recently (late 2007) the Ministry of Education, University and Research issued a document that directly addresses the issue of LLL and HE. The guidelines recognise the fact that adult LLL has to become the new 'mission' of Italian Universities. The main measure foreseen to reach such goal is the constitution of Permanent Learning Centres. Such centres should be organized to become high-level LLL reference providers with respect to both Universities geographical district and distinctive subject matters. The guidelines identify three distinct CAP functions/services:

• the acknowledgement and certification of experiences and competencies that have been acquired in formal and informal contexts;

• the development of more flexible and competency-oriented University courses, which should be more easily adapted to the needs of the adult population, e.g. through the provision of e-learning courses and of shortened courses (Permanent Learning Modules);

• the strengthening of the links between Universities, public and private bodies through joint initiatives, such as stages, partnerships, work-based learning actions, and mixed educational curricula.

On overall, the intention to update the national system at a central, local and HE level is instantiated by a number of actions and ongoing experimentations. However, there seem to be some unresolved issues that have the potential to seriously slow down LLL modernization in Italy. First of all, the attitude to provide new instruments without foreseeing the process through which such new opportunities will be effectively implemented. The most relevant evidence lies in the fact that, despite the many LLL initiatives that are taking place at a Country level, very little effort is provided to support necessary and preliminary careful actions focused on the analysis of competency lacks and educational career planning. Secondly, most of the innovations (especially those in the HE sector) are strongly encouraged but are not coupled with dedicated funding. Finally, the growing number of agencies and instruments seem to be launched with a scarce high-level coordination, a fact that is worsened by an insufficient capacity of communicating the new opportunities to citizens and companies. All of the aforementioned issues generate the overall feeling that, at least at the level of the higher national governing bodies, changes and innovations are more defined to comply with, and because of external (that is, EU) recommendations than as an intrinsic and necessary move for country's welfare.

In Spain, to tackle aforementioned social class inequalities, there are proposals and programmes to increment the fees for credits, with the objective to improve the funding of higher education, and improve the financial support for students coming from lower and lower middle class
families. The first experiences indicate that the Spanish families are not familiar with such type of financial support. This means are often used by the middle-up class, something that was not intended by the original program. Lifelong learning has been recently newly regulated by an Agreement on Vocational Training for employment and the creation of the Tripartite Foundation for Vocational Training. By the Agreement (6th of February 2006), the Government and the social partners established an integrated system of occupational and continuous vocational training in response to the need of a coherent system of lifelong learning. The objective was the creation of a dynamic and flexible system, which can give answers to the continuous changes in the labour markets, and at the same time of a stable system “to cope with the challenges facing our economy from the training point of view within the European Strategy for obtaining full employment” (Agreement on Vocational Training for employment). In the year 2007, the Tripartite Foundation has provided lifelong learning measures for more than 1,562,596 benefits. Part of these training measures have been organised by universities or associated foundations or have been directed by higher education staff. Spanish universities are developing more programmes of continuous training. This strategic option gains relevance, but standing still in the second priority line. Almost all universities have developed lifelong learning strategies offering a wide range of post-graduate programmes beside the PhD-programmes. But the policies of the universities and the training programmes are very heterogeneous characterised by its short-term design, and, at the national level, there are no data to evaluate their diffusion and effectiveness. However, two types of programmes, which are generally developed in the Spanish universities, can be identified:

- courses for elder persons between 50 and 55 years, with the goal to improve their quality of life and promoting the participation of these citizens as 'social dynamotors';
- enterprise courses: the 1983 Act of University Reform opened spaces for collaboration between enterprises and universities in the definition of training programmes.

Life long learning course are, in general, for fees, which can achieve in some case a considerable level promoting in this case the access to a restricted informal labour exchange market. In other words, the access to higher lifelong learning provision is regulated by money paid by the student himself or by the enterprise.

Beside the above mentioned (see previous paragraphs) questionable quality of large number of diploma issued by the Hungarian higher education institutions, the massification process has had generated different negative outcomes:

- The increase of the number of students was not accompanied by the necessary growth in human, financial and infrastructural resources. That is, the Hungarian teachers have the
heaviest workload in Europe and since the collapse of the state-socialist political-economic regime the teacher/student ratio has been tripled.

- Teaching technology was consistent with the characteristics of an elitist higher education system where only 10% of the population could participate in the courses offered by polytechnics and universities. The shift from this elitist to a mass-education was not followed by an appropriate transformation of the pedagogical methodology.

- Another result of the massification process was the appearance of the so-called ‘teaching factories’. This means that the research activities have been eroded within the various portfolios of universities. This process was reinforced by the fact that in the majority post-socialist countries an independent network of academic research institutions was built-up after the 2nd World War.

- The massification unequally affected the various disciplines. The proliferation was observable in such disciplines as economics, law, communication, human resource managers, etc. This increased number of fresh graduates in the earlier-mentioned fields did not meet the demands of the labour market (enterprises, public institutions). Thus, the supply side growth of the higher education system was driven by the needs and expectations of ‘students and their parents’ instead of the labour market regulation.

Finally, Europe-wide statistics such as Labour Force Survey call the attention to the relatively low share of the Hungarian adult population participating in education and training. In 2006 only 3.8 percent of adults participated in life long learning, which is the lowest percentage of all six countries in the NESOR project. As a consequence, one of the biggest social risks in Hungary is the abstention of a large mass of the economically active population from life-long learning.

In recent years, as already mentioned, Poland experienced a relative decrease in the demand of people with higher education. At the same time, the supply has been steadily growing. As a consequence, the situation of graduates has become more similar to that of non-graduates. The representatives of universities noted that the structure of fields of study must be adjusted to the needs of the labour market. Study curricula must include practical forms of training, including student internship programmes. According to the experts representing non-state universities, higher education institutions should also step up efforts to increase the ability of their graduates to find their way around the labour market (not only be helping them to find a job, but also by teaching them skills which will enable them to cope with the requirements of the labour market). Characteristically, the Polish system of continuing education tends to be seen as synonymous with vocational education, because it usually relates to: training in occupational health and safety, foreign languages, vocational development, preparation for the acquisition of
vocational titles or training for a specific profession. All these activities take place in different locations and are usually supplied by the market of training services, the system of training for the unemployed or by public establishments, for example by Continuing Education Centres. In accordance with the “Act on the system of education” (art. 3 point 17), lifelong learning should be understood as education in schools for adults, as well as acquisition and supplementing general knowledge, skills and professional qualifications in the out-of-school system by persons who have fulfilled their compulsory schooling obligation. Lifelong learning in Poland is organized and provided within the system of education in: schools for adults, lifelong learning establishments, practical training centres, centres for supplementary vocational training and development. Since early 90s, the system of lifelong learning in Poland has been characterised by a strongly decentralized and spontaneously developing sector of training services and a system of organized training for the unemployed. Nearly 95% of in-school forms of education are offered to adults in urban areas. It is estimated that in 2004, training courses were provided by about twelve thousand institutions, five thousand of which were schools and over two thousand were vocational development centres. The remaining group of providers of educational services are institutions that provide training pursuant to the Act on economic activity and as such they are not registered in any records and are not subject to supervision (accreditation). These data demonstrate that training, courses and other forms of lifelong learning are treated as economic activities, rather than educational ones. It can be anticipated that the number of educational services will increase considerably, because large amounts of EU funds are available for the operational programme 'Human Capital'. It remains to be seen, however, if these funds are used in a way that takes into account the needs of the economy and vocational development needs of a given individual. Having watched the progress of the Polish educational market in the last 18 years, especially at tertiary level, very few reasons for optimism in this respect are reported.

3.4.2.3 Future strategies and recommendations

Compared to the 20th century, modern universities are stimulated to be more aware of their role in a European dimension, not only with respect to the transparency and comparability of their programmes, but also with respect to their overall societal impact. A high performing HE is requested to facilitate and shorten the school-to-work-transition, which, in turn, would have positive effects on social inclusion. However, given the economical context and the changes of the labour market, such a task has become extremely complex. To this respect, which might be seen as one of the major, emerging social risks, connected with the advent of the knowledge society, NESOR HEIs seem to have initiated policies, which would be suitable for reaching the
targets set by the Lisbon Strategy. On the other hand, in the words of an interviewee: "Despite the efforts of the EUA (European Universities Association) one cannot see coherent policy involvement of universities neither at the European level, nor at the national levels. There’s a high degree of learning-by-doing and experimenting". Furthermore, in general, the reforms seem to have privileged, at least in some countries, the quantitative aspect (i.e. the number of graduates) to the detriment of other, extremely relevant qualitative aspects. In addition, it should be noticed that the discussion on the role of universities with respect to social cohesion must not be reduced to a provision of skills for self-marketing of graduates. A social responsibility of universities exists to prepare their graduates for life after their studies, to take part in a societal and public discourse on the basis of serious research and a joint position and practice which no longer neglects social risks, but puts them at the centre of attention. In other words, such questions on new social risks, and the reaction of universities upon them, should flow into processes of strategic orientation, operational planning and meta-management, which universities are anyway forced to engage in, in strict cooperation with other social actors, avoiding simplifications and not giving up their peculiar identity and function (e.g. critical thinking). Unfortunately, at least some universities seem to rather follow the tide than advancing new views on these overarching trends.

Recommendations:

- **Bachelor degree's contents should be better fine-tuned.** It is the impression of many interviewees that the first cycle curricula have been defined as preparation courses for the next educational step instead of having a valence by themselves.

- **In the same way, to reduce the risk of unemployment for people with higher education, the value of bachelors should be better communicated** to both students and employers, which, at least in some cases, seem to perceive the shorter permanence in the HE system (first level degree) as an insufficient qualification.

- **HEIs are in need to develop educational content, which prepares graduates towards flexibility,** which relates to the shaping of curricula in a way that people 'learn to learn'.

- **HEIS should go for reforming not just the curriculum but also their organisation and structure,** including new departments, and also trying to have a more interdisciplinary and transdisciplinary offer.

- **Though research performance continues to be the main reference point for accountability of HE staff, more relevance should be attributed to teaching.**

- **Although the increased modularity of HE, introduced by the Bologna process, has had the effect of mitigating some well known 'old' social risks** (e.g. gender inequalities), in some
cases (e.g. the historical breach between northern and southern part of Italy), the reform has had weaker-than-expected effects, and new, specifically targeted, country level actions should be defined.

- The participation of ethnic minorities to HE, as compared to native population, should be carefully monitored.
- HEIs contribution to LLL, which continues to lag behind the desired targets, enforcing in many cases social inequalities, is a primary action to be considered.
- Universities should play a much more relevant role in LLL in the direction of an adult-centred modularization targeted to provide a wealth of easy-to-access, high-level courses.
- New types of students (adult, practitioner, lifelong learner) also require new teaching methods. E-learning initiatives, which are less constrained in time and space, should be further enforced, as a viable way to extend HE-provided LLL.
- Employers should have been given a role too. For example, extra-curricular and/or LLL courses targeted to the acquisition of specific competencies could be defined in partnership and partially funded by companies.
- More attention should be put on LLL 'accompanying measures', such as wider communication and information; analysis of competency lacks and educational career planning; improved coordination among public and private bodies; monitoring and assessment of experimental initiatives; adequate funding.

3.4.3. European dimension and internationalization of higher education

"Universities have been international institutions from their medieval European origins, attracting students and faculty from many countries. The rise of nationalism and the nation-state after the Protestant Reformation focused academia inward [...]. Now academia has regained its international scope and direction. Information Technology, the knowledge economy, increased mobility for students, faculty, programs, and providers, and an integrated world economy propel internationalization" [Altbach & Knight 2006]. One of the main goals of the Bologna Process is to build a European Higher Education Area by 2010. A great effort has been invested to create an overall framework of comparable and compatible qualifications, workload, learning outcomes and competencies. Both the EQF (European Qualification Framework) and the ECTS (European Credit Transfer and Accumulation System) aim to harmonize the entire academic and professional systems to ensure compatible degree structures, transferable credits and qualifications across Member States. Such frameworks are intended to speed up and increment to a great extent the process of internationalization, which is strongly supported for two main reasons. The first reason lies in the fact that internationalization is conceived as a way to reach
better research results through a cooperation that goes far beyond the limits of the single countries. The second reason is that the exchange of staff and students across the EU is necessary to further promote social, political and economical integration among Member States. However, internationalization "means different things to different HEIs, university associations, governments and non-governmental agencies. For some it means international activities such as study abroad, international development projects, institutional agreements, or branch campuses. For others it means integrating an international dimension into teaching/learning, research and service functions of higher education. And still others see it as an international profile or brand in order to be competitive both domestically and globally. These various perspectives reflect the fact that there are different rationales driving HEIs to internationalize, bringing a wide range of anticipated benefits and possibly unintended outcomes" [Knight, 2006].

3.4.3.1 Awareness

Internationalization is acknowledged as a high priority by both institutional levels, national universities and national government policies.

<table>
<thead>
<tr>
<th>Figure 21: Importance of internationalization according to HEIs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Graph showing the percentage of HEIs' priority levels for internationalization.](source: IAU Internationalization Survey 2005)</td>
</tr>
</tbody>
</table>

The main expected benefit is the increase in international knowledge and intercultural skills in university students, academics and staff members.
The social function of higher education in the social models of the European knowledge society

Figure 22: Ranking of most important benefits of internationalization.

- Brain gain
- Revenue generation
- National and international citizenship
- Diversity of programs
- International solidarity
- Innovation in curriculum
- Strengthen research
- Academic quality
- Internationalize staff/students


The number of foreign students (index of internationalization) is increasing. However, these figures are still a way behind the desired targets.

Table 21: Percentage of foreign students in tertiary education (1998, 2003)

Source: OECD. [www.oecd.org/edu/eag2005].
Table 22. Student mobility and foreign students in tertiary education (2000, 2005)

Reading the first column: 20.6% of all students in tertiary education in Australia are non Australian citizens, and 18.4% of all students in tertiary education in Switzerland are non Swiss citizens.

<table>
<thead>
<tr>
<th>OECD countries</th>
<th>Foreign students as a percentage of all tertiary enrolment</th>
<th>Index of change in the number of foreign students, total tertiary (2000=100)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total tertiary</td>
<td>Advanced research programmes</td>
</tr>
<tr>
<td>Australia (1)</td>
<td>20.6</td>
<td>28.3</td>
</tr>
<tr>
<td>Austria (1,3)</td>
<td>14.1</td>
<td>20.2</td>
</tr>
<tr>
<td>Belgium (1)</td>
<td>11.7</td>
<td>30.8</td>
</tr>
<tr>
<td>Canada</td>
<td>m</td>
<td>m</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>5.5</td>
<td>7.2</td>
</tr>
<tr>
<td>Denmark (1)</td>
<td>7.5</td>
<td>18.5</td>
</tr>
<tr>
<td>Finland (2,3)</td>
<td>2.8</td>
<td>7.3</td>
</tr>
<tr>
<td>France (1)</td>
<td>m</td>
<td>m</td>
</tr>
<tr>
<td>Germany (2)</td>
<td>11.5</td>
<td>m</td>
</tr>
<tr>
<td>Greece (1,3)</td>
<td>2.4</td>
<td>m</td>
</tr>
<tr>
<td>Hungary (1)</td>
<td>3.1</td>
<td>8.1</td>
</tr>
<tr>
<td>Iceland</td>
<td>3.2</td>
<td>12.7</td>
</tr>
<tr>
<td>Ireland (2)</td>
<td>m</td>
<td>m</td>
</tr>
<tr>
<td>Italy</td>
<td>2.2</td>
<td>4.3</td>
</tr>
<tr>
<td>Japan (1)</td>
<td>3.1</td>
<td>17.1</td>
</tr>
<tr>
<td>Korea</td>
<td>0.5</td>
<td>x(5)</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>m</td>
<td>m</td>
</tr>
<tr>
<td>Mexico</td>
<td>m</td>
<td>m</td>
</tr>
<tr>
<td>Netherlands (3)</td>
<td>5.6</td>
<td>m</td>
</tr>
<tr>
<td>New Zealand (1)</td>
<td>28.9</td>
<td>38.3</td>
</tr>
<tr>
<td>Norway (1)</td>
<td>4.8</td>
<td>18.6</td>
</tr>
<tr>
<td>Poland</td>
<td>0.5</td>
<td>3.2</td>
</tr>
<tr>
<td>Portugal</td>
<td>4.1</td>
<td>7.3</td>
</tr>
<tr>
<td>Slovak Republic (1)</td>
<td>0.9</td>
<td>0.8</td>
</tr>
<tr>
<td>Spain (1,3)</td>
<td>2.5</td>
<td>18.9</td>
</tr>
<tr>
<td>Sweden (1)</td>
<td>9.2</td>
<td>20.3</td>
</tr>
<tr>
<td>Switzerland (2,3)</td>
<td>18.4</td>
<td>43.2</td>
</tr>
<tr>
<td>Turkey</td>
<td>0.9</td>
<td>2.1</td>
</tr>
<tr>
<td>United Kingdom (1)</td>
<td>17.3</td>
<td>41.4</td>
</tr>
<tr>
<td>United States (1)</td>
<td>m</td>
<td>m</td>
</tr>
<tr>
<td><strong>OECD average</strong></td>
<td><strong>7.6</strong></td>
<td><strong>17.5</strong></td>
</tr>
<tr>
<td><strong>EU 19 average</strong></td>
<td><strong>6.3</strong></td>
<td><strong>14.5</strong></td>
</tr>
</tbody>
</table>

1. For the purpose of measuring student mobility, international students are defined on the basis of their country of residence.
2. For the purpose of measuring student mobility, international students are defined on the basis of their country of prior education.
3. Percentage in total tertiary underestimated because of the exclusion of certain programmes.
4. Excludes private institutions.

Source: OECD. See Annex 3 for notes [www.oecd.org/edu/eag2007]

Please refer to the Reader’s Guide for information concerning the symbols replacing missing data.
As an example, the importance of international attractiveness of Polish institutions of higher education has only been recognized in recent years, following the publication of the results of global rankings, such as the Shanghai ranking from 2007 (two Polish universities are listed in it, but in very distant places). The participation of Polish universities in the international exchange of students, mainly within the framework of the Socrates-Erasmus programme, which has been steadily growing in recent years. However, the level of this international exchange must be described as unsatisfactory, as only 1% of all students take part in it. The number of foreign students arriving to study in Poland is even smaller.

3.4.3.2 National experiences
The chance to spend some time abroad and/or working while studying is still underestimated in its importance. Students still tend to share the idea that the most relevant issue is to finish as soon as possible their course. Among the post-reform first-level graduates, the share of students who spend a period abroad is decreasing. Such a decrease is a negative fact, given that the chances to find a job, five years after being graduated is 4% higher for those who have spent a period abroad and, for these students, the time to find a job is shorter (two months) than for those who don’t have international experiences (three months).

However, in general terms, the international mobility of the students has increasing from 2000 to 2005. The OECD data shows overall for the Anglo-Saxon states, as well as Japan and Korea very high growth rates of the foreign students in higher education. Within the EU, the Czech Republic, the Netherlands and Norway more then doubling their foreign students must be mentioned. The NESOR-countries, with the exception of the Netherlands more moderate growth rate: Italy 195.6%, Poland 185.5%, Hungary 146.3%, Austria 129.4% and Spain 125.4%.

International mobility of doctoral students is pointed out by OECD as an indicator of the internationalisation of both the higher education sector and the research system. PhDs mobility indicates the attractiveness of advanced research programmes and the existence of career opportunities for junior researchers in the host country. Beside that, doctoral students contribute to the advancement of research in the host country, eventually taking back new competencies and connections with international research networks. Non-citizen students represent 40% of the doctoral population in Switzerland and the United Kingdom, but less than 5% in Italy.

As for the negative effects of mobility and internationalization, brain drain has from long time been the primary issue across the EU and in some NESOR Countries as well. “The departure of European scientists to the U.S. is nothing new, of course. Political and religious persecution
drove luminaries like Albert Einstein and Enrico Fermi across the Atlantic. The exodus continued in the 1950s and 1960s, as the U.S. poured billions into defence-related research and created magnetic clusters of scientific excellence, staffing them with the world’s best minds and prompting Britain’s Royal Society to coin the term brain drain” [Time, 11 January 2004].

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</table>

When researchers, and (PhD) students decide to go abroad, the national system looses highly qualified individuals loosing the investment that has brought them to a high level of
specialization. "Besides concrete outcomes, such as i.e. patents, may provide instant benefits to the host country with little or no like benefits to the originating one. A direct loss can be envisaged also in pure economic terms, the investment made in tertiary education turns into a benefit for another nation and in a perceived waste of national resources that give poor returns from public investment" [OECD, 2006].

In Hungary, the inconsistency between the strategic and the instrumental goals, the lack of central legislation and of the involvement of the social partners into the creation of the two-cycle system led to a large number of specified programmes. As a non-intended result a very rigid undergraduate system was created with a large number of over-specialised programmes, which makes difficult the students’ mobility and, as a non-intended effect, contradict to the original strategic aim of Bologna Declaration.

In Italy a researcher might be earning €900 a month, while in the USA he could get nearly three times that. Science has become a competitive market, and the big buyer is the USA. "In 2000, the U.S. spent €287 billion on research and development, €121 billion more than the E.U. No wonder the U.S. has 78% more high-tech patents per capita than Europe, which is especially weak in the IT and biotech sectors. Some 400,000 European science and technology graduates now live in the U.S. and thousands more leave each year" [Time, January 11 2004]. While other Member States seem to experience a 'brain exchange' in Italy, the brain drain problem has worsened.

The situation of young Spanish researchers is similar to the Italian scenario. It is not only characterised by the low-income level, but also by the precariousness of labour conditions. For this reason, the phenomenon of brain drain is highly important for Spain. In the last years, the Spanish governments have tried to improve the labour situation of the young researchers giving them e.g. social assurance rights (employment status). On the other hand, taken as an indicator the statistics of the Erasmus programme, the Spanish higher education is highly internationalised: it is the main host country of Erasmus students (17.24 of all Erasmus students) and it is the third country sending students abroad (14.01%). However, the data of the Erasmus programmes are only a limited indicator of the internationalisation of the national higher education. The internationalisation of the Spanish higher education isn’t only focused on the integration in the European higher education space, but also to creation of a common higher education (and research) space with the Latin-American countries.

Although the Netherlands was an early adopter of Bologna elements in legislation and the bachelor-master structure (Ba/Ma) is widely implemented in practice now, HE institutes appear to be persistent as regards implementation of standardized qualification frames and credit points systems. Incompatibilities still have to be solved to better facilitating international mobility of students and graduates. At HE institutes people often have doubts about the possibilities of
describing and assessing programmes and qualifications in terms of (standardized) competences, learning outcomes and credit points. Although internationalisation gradually increases - measured at least by mobility rates and bilingual course supply - experts still observe several obstacles for students. Obstacles have to do with financing of stay and study periods abroad, recognition and validation of credits and certificates, stay and work permits in other countries. An important point is the use of Dutch study grants for courses in other countries. Until recently this was limited and only possible for a small number of students under strict conditions. Since 2007, however, the rules have been liberalised so that more students can take their study grant with them. According to NUFFIC, a Dutch organization for international cooperation in higher education, in 2006 a total number of 49,750 persons from other countries were studying in the Netherlands, which is approximately 9% of all students. This number is a slight increase compared to the year before. At the other side, 18,250 Dutch students went abroad to study in another country, which is circa 4% of all students. Most of them went to other EU countries, like the UK, Belgium, Germany and France. Furthermore, a substantial amount went to the USA. Half of the students go abroad for a work experience period, one quarter to take a theoretical course.

In Poland, several issues are characteristic for the international exchange of students at public institutions of higher education:

- disproportion between the number of students leaving to study abroad and the number of students arriving to study in our country;
- non-existence of system solutions in the organization of this exchange (everything depends on coordinators in particular departments and on their resourcefulness and enthusiasm);
- decreasing interest in study programmes abroad and a large number of students withdrawing their participation (even just before the departure);
- greater interest on the part of Universities in the new Members States of the EU that on the part of the old EU countries (EU-15);
- shortage of teachers of foreign languages (resulting from insufficient financial incentives provided by the academic authorities);
- few places (at foreign Universities) with instruction in English (i.e. in the language understood by most Polish students; few students can speak other foreign languages).

3.4.3.3 Future strategies and recommendations

Although the mobility of students and scholars and the internationalization of higher education are growing trends all over the world, there's a clear need of promoting many more concrete
initiatives to support mobility and cooperation to make the wished ‘European Higher Education and Research Area’ a reality.

Recommendations:

- **International experiences (e.g. Erasmus Programme) should be enforced**, given that these are the primary contexts in which young people could learn also those transversal skills (autonomy, interpersonal competence, openness, etc.) that are awarded in the knowledge economy.

- **More funding** should be allocated to encourage mobility and international exchanges for those students with limited economical resources to take advantage of the chance of spending a six-month period abroad.

- **English should be adopted as the teaching language**, at least in a percentage of classes.

- **Institutional impediments** in the sphere of stay permits, financial arrangements, and recognition procedures **should be removed**.

- **Attractiveness (and working conditions) of research careers should be improved** and the local 'brain drain' that is taking place in some countries, with the consequent loss of human capital, should be replaced by 'brain exchange'.

- **Funding for national research centres of excellence** and to attract return migration and foreign talent should be increased.

3.4.4. **Conclusions**

In conclusion, according to the rich evidence accumulated throughout NESOR WS5 national studies, after a few years from it is launching the contribution of the Bologna Process to the making of a European knowledge society/economy resulted in mixed achievements. The reform has produced different impacts on the different national educational systems, along with different economical and social consequences, and it is hard to say which country's experience could be considered as 'the best practice' to be extended to all EU HEIs. Furthermore, the transition towards the European Knowledge Society is proceeding at quite a different pace among the participant countries (as it can be seen in the Global Competitiveness Index), partly in response to the diverse degrees in which knowledge-based activities are present in the different economies and partly because the importance of knowledge as a long-run growth factor is differently acknowledged by Member States. The very same assumption behind the Lisbon strategy, i.e., that the rapid creation of knowledge and easy access to it enhances counties' efficiency, quality, and equity, is still under debate. While it may be plausible and even probable for certain types of activity and even certain national systems as a whole, it seems to
The sudden change in the labor demand has led to an upgrading of jobs which sometimes has been found to deepen inequalities, both with respect to the least skilled workers and with respect to the high-skilled ones. All this creates new social risks and calls for an active response by Higher Education Institutions. To face contemporary challenges, contribute to social cohesion and sustainable economical development, EU higher education institutions must further engage in local and global reflections, being active agents in the creation of the future society. Curricular adaptations, lifelong learning, assistance in the transition from education to learning, provision of equal opportunities for all, are all relevant and challenging tasks which definitely are part of the contemporary role of EU Universities.
4. To There

The future (of) Universities

And new social risks

Policy brief for decision-makers

in higher education
4.1. Background and Context

4.1.1. Lisbon, Bologna and the Changing Role of Universities

The Lisbon Agenda of the EU (with its focus on competitiveness and employability), and the Bologna Process (with its attempts to achieve trans-national transparency of European Higher Education) have greatly influenced and upset Higher Education in Europe over the last decade. In addition, new global challenges, economic developments, and changing societal expectations have put new strains on our universities. Finally, New Social Risks have emerged, and result in new concerns for university students and alumni, but also current employees of HEIs.

Definitely, the discussion on the role of universities must not be reduced to a provision of skills for self-marketing of graduates, and especially in the fields of social sciences a social responsibility of universities exists, to prepare their graduates for life after their studies, to take part in a societal and public discourse, on the basis of serious research and a joint position and practice - which no longer neglects social risks, but puts them at the centre of attention. In other words, such questions on new social risks, and the reaction of universities upon them, should flow into processes of strategic orientation, operational planning and meta-management, which universities are anyway forced to engage in.

This is why NESOR and this Policy Brief insistently ask the question of the future of university vis-à-vis the existence of new social risks, i.e. a highly relevant issue for European societies, which are analysed across national borders. From this conviction and standpoint, NESOR is also producing this policy brief for decision-makers, and daring to issue clear-cut recommendations how to shape the universities of the future.

4.1.2. New Social Risks

Before reporting the findings and experiences of universities across Europe, however, a few questions have to be asked on these “New Risks”, and as well this one: are they indeed new risks or old risks?

Risks are different from uncertainties (e.g. catastrophes); the latter come unexpectedly, and can not be foreseen. Risks, however, are known in advance, and – in principle – preventive action can be taken. In other words, risks can be calculated, whereas uncertainties can be (only) perceived.

For example, generational risks are considered “new”, according to Wolf [2005], whereas old risks are related to a more stable environment; instability comes from precarity and unemployment, e.g. but not only in working life, also in social life. Whenever social situations
are changing, new social risks appear: examples related to newly emerging situations at the beginning of the 21st century include parental leaves, civilisatory diseases like burn-out, or demographic changes and life expectancy, resulting in a longer working life – all of them clearly have influences or interrupt or change all our working lives. Risks, which are cited and analysed today as shaping and changing our societies, are the following:

<table>
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<tr>
<th>Globality/Globalisation</th>
<th>Terrorism</th>
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<tbody>
<tr>
<td>International Migration</td>
<td>Extreme-right parties</td>
</tr>
<tr>
<td>Underfunding of public sector</td>
<td>Predictability</td>
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<tr>
<td>Flexibility of Labour Market</td>
<td>Employability</td>
</tr>
<tr>
<td>Precarity of employment</td>
<td>Health system threatened</td>
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<tr>
<td>Competition from private actors</td>
<td>Over-aging of society</td>
</tr>
<tr>
<td>Pensions unsure</td>
<td>Gender roles change</td>
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<tr>
<td>Unemployment</td>
<td>Etc.</td>
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Looking in more detail at the question of New vs. Old Risks, it can be stated that Old Risks are those, which are related to a stable working life; in contrast, New Risks are related to unpredictable careers. They hence include three dimensions of our lives:

- **Personal life family:** relations, place of living, shifting identities, etc.
- **Work:** changes concerning workplace, enterprise, sector, employment status, economy
- **Society:** changes related to our city, country, Europe, planetar community – and growing interculturality at all levels

Clearly, social research needs to investigate both reasons and results of these risks. In this project, we looked at an even more specific question, i.e. the results of these risks for the Higher Education (HE) sector, and single universities (and other HEIs).
4.1.3. New Social Risks and Higher Education

At the same time, universities, through their expertise on and insights into society and economy, are prone to have a higher awareness of the new precarious labour conditions, especially for young graduates, and of particular manifestation in the research and teaching professions – if compared to private employers. However, the repetition of unstable and often unfair employment and collaboration conditions also for university employees (and often freelancers) was found commonplace across the countries investigated by NESOR. The traditionally high societal status of university employment often pushes young researchers and lecturers to accept conditionality they would otherwise not accept.

In other words, there may be cases where universities – instead of displaying a higher awareness for social risks – even take advantage of the new risks on the labour market. From university side, this is often explained (and justified) as a problem of under-funding. However, the growing number of (unpaid) “internships”, also at universities, which are seen as a convenient entry to prestigious positions and learning opportunities, but, however, often translate into unstable labour situations. Even more important, as universities prepare students (also) for a professional career and employment, the real and realistic situation, which graduates will face on the labour market should be part of university responsibilities. The prominent (political) discussion on “employability” often impedes a critical view on the existence, consequences and impact of social risks today.

In general we can summarise our findings from research and interviews in one statement: universities do not consider NSR as their concern. They provide knowledge, and they teach students. It is not their responsibility to take care of the future professional and private lives of their students, as this highly representative citation shows: “We provide first class education, and if our graduates are unemployed, it is their problem (and fault!)”.

This raises yet another question: For whom do these new social risks exist? Only for people inside, or also those outside of universities? However, in other new challenges of political relevance, universities have to take a stand, and to promote equality for their academic staff and balance certain issues, e.g. gender: is it no issue in Higher Education, or is there at least only little awareness of over- or under-representation of women in certain fields? Similarly, the question of ageing societies and demographic changes, which translates into decreasing numbers of incoming students, will force universities very soon to start looking for more part-time and adult students.

Nevertheless, under-funding of the public sector is definitely an issue across Europe, which affects universities as well. However, is it a “new risk” or not? However, from interviews it is
evident that for universities, the obligation to look for other funding sources also implies the precarisation of working situation of university staff. In other words, employment terms are adapted to general precarity.

It is well known, and research shows, that tendencies of social exclusion usually start at very early age: there is a societal challenge to pay attention to social exclusion, which transcends into Higher Education as well: not only when integrating secondary education into tertiary education, a higher degree of awareness is needed.

The “Retreat of the State” is a fact also in HE: governments withdraw from tertiary education – and leave it increasingly to the market (forces) to solve decisions also in the education sector. Reformulating the role of HEIs, and their relations to the broader (secondary) educational system, the weak links between secondary and tertiary education, better connections between theory and practise, a combination of soft and technological skills, and a “T-shaped” form of education – all these slogans refer to the tension between theoretical learning vs. practical learning.

Still, there is also agreement that new skills are needed, not only in the form of traditional knowledge, but in a combination of soft and technological skills. This is also true for the changing requirements and roles of university teachers: beyond a mere transfer of knowledge, their tasks also include - beyond the essential 1) transfer of information – also:

2) transfer of knowledge,
3) transfer of skills
4) transfer of attitude,
5) transfer/change of responsibility,
6) transfer/change of behaviour,
7) (transfer of) empowerment

Another question, i.e. how to organize HEIs in order to make possible top-research, is easily in conflict with educational tasks (and may result in a shift of top-research from HE to industry).

At the same time, such existing problems may not be perceived as social risks. After all, the unemployment of graduates is sometimes presented, according to university managers, as “their problem”. Often only “digital marginalisation” is seen as such a risk of clear concern for HEIs. The marketization of Higher Education and its potential clash with social inclusion (i.e. solving problems of underprivileged groups) is not necessarily a contradiction for HEIs. In today’s tense labour market, the importance of human capital is stressed by all analyses and studies of the “knowledge economy”, and even industry and traditional companies might be interested in
supporting HE, because they have a high demand for skilled workers and young and additional employees needed for a growing labour market.

Clearly, all these questions refer to the challenges posed to university management and their need to self-evaluate their performance and objective as part of an ongoing working culture. But – who is advising rectors, deans and other university managers? And what is the quality of advise to they get?

After all, many stakeholders, who also act as advisers, engage in this discussion with partially conflicting interests: the overlapping and contradictory interests by (too) many stakeholders were thus mentioned frequently throughout our investigations. Hence, do universities need more outreach or already too many stakeholders?

Perhaps this is the main challenge for universities and their rectors: How to contribute to solve social problems and at the same time contributing to economic growth? Or do we risk to overburden the HE system with such demands? Is there already too much intervention or indeed too little support by the state and other stakeholders?

The first conclusion is thus obvious: not only societal risks transcend into university, but university is undergoing radical change itself – on its way from the medieval tower (in Bologna or Paris) to the diversification of “the” university in the 21st century (with its global expansion),

4.1.4. Rector’s Advocate: How to Ruin a University...

In a conjectural exercise, NESOR experts collected recommendations for the opposite goal than usual: they answered the question how rectors would need to act in order to certainly ruin a university.

Clearly these sometimes contradictory suggestions need to be turned upside-down, in order to reveal the threats and opportunities for today’s universities:

- Disconnect from society
- Maintain and increase Endogamy
- Contribute to precarisation of Human Resources
- Transform University to training agency (no science, no research, less autonomy – innovation – vision)
- No more innovative teaching (no interest in curricula, structure of programs, focus on “economics”), commercialize
- Spend money only on infrastructure instead of teaching
- Give in authority to financial managers
Limited access / uniform membership

Unlimited access

Force teachers to do more research next to teaching, i.e. continue role ambiguity

Dedicate all resources to research/exclusive priority for research

No decision-taking -> no profile -> no vision

Exclusive national preference and inform membership

“Laissez-faire”

4.1.5. **Provocative Hypotheses**

The following hypotheses have been formulated by NESOR in order to stimulate discussion and focus groups with HE stakeholders:

1 | European HE lives under a hermetic glass cover. No contacts to the non-university world, no interest by external actors in the university.

2 | McDonalds is a smart organisation with dump collaborators. The mainstream European university has smart collaborators but is a dump organisation.

3 | European Universities are not only not fighting against new social risks faced by their members/staff (and to tackled by their graduates after leaving the university!), but they often rather take active advantage of the precarious status of their employees.

4 | If they continue to live on reputation and melancholy, European universities will soon be outdated, irrelevant, un-needed. More innovative other actors will take over, to answer to and address, newly emerging education, training, skills and LLL needs.

4.2. **Dilemmas of Today’s Universities**

4.2.1. **Elite Provision vs. Mass University**

Both academic tradition and new trends in European HE tend to focus on elite provision as the main focus of universities. New financing schemes in e.g. Germany, research aiming at global leadership, and — last not least — a constant, and perhaps even obsessive look on the international rankings of universities support these tendencies. However, the rates of university graduates in many European countries are still below the achievement of leading countries in
other continents: e.g. USA or South Korea. If awareness about and concern for new social risks were to be a main motivation of university strategists, the current negative connotation of “mass” university is to be converted into a positive aim: the most of young people should be eligible for, and naturally undergoing, Higher Education, in a wide diversity of forms, lengths, contents and offers.

4.2.2. **Specialisation vs. General University**

(or: Humboldtian autonomy vs. University as part of service economy)

While this dilemma is often mentioned in interviews at institutional and policy level, in our analysis it emerges not a problem of either-or. Both specialised HEIs and general universities have a right to exist, can find their market niche, are able to define an offer of study programmes, and will find their clients. Rather than an exclusive pair, both (thematic, methodological or programmatic) specialisation and general universities aiming at a broad trans-disciplinary education are necessary to cater for the diversifying needs of the European (and global!) skills needs and labour market.

4.2.3. **No-string public funding vs. Diversified funding mechanisms and incentives**

Funding schemes are increasingly linked to features like performance and quality – which themselves presuppose a more sophisticated strategy definition and measurement of outcomes and impacts (also called “meta-management” by Spindler [see Budapest presentation 2008 and Navreme vol. 7c]). Clearly, incentives for institutions and individuals need to be provided, and in exchange for public monies spent on them, universities have the obligation to communicate with society, about what they are doing, and why.

4.2.4. **Harmonisation via Bologna Process vs.**

4.2.4.1 **Diversity of approaches, collaborators, models as a richness**

Obviously, the general system (of the European economy/society), if confronted with the HE Sub-system (tertiary education, universities, research, science, teaching). This has often leaded to a critical approach to Lisbon among HE experts and practitioners (in the form of “commercialisation of HE is good, traditional role of universities is bad” – or vice-versa). Clashes are therefore unavoidable, if political criteria like those of the Lisbon Agenda are applied to the HE system without previous reflection and adaptation to the sub-sector’s situation and conditions.
4.2.4.2 Academic titles vs. Competence-based learning

In many institutions observed, resistance to change was coupled with little concern about knowledge about future skills and education needs. According to futurologists, teaching and learning towards core skills, and for professions, as we do not know which professions will exist in the future. In other words, although we have no clue what kind of professions will exist in 30 years, we continue to still train students profession-specifically. Skills (often labelled as “core skills”) like personality development, empathy, communication skills, conflict management, self-awareness, and authenticity, etc. are all educational objectives which - in the best cases - are contained in curricula in only an indirect manner.

Person-centred services like coaching, managing, caring for, healing and informing people will be ever more important. All of the above needs to be learned - and taught. Half of the curricula should be amended in this respect. And teaching modes will need to be adapted accordingly...

4.2.4.3 Research vs. Teaching

This endless discussion is definitely beyond the frame of NESOR and its products. Nevertheless, it needs to be mentioned for matters of completeness. Clearly, reputation, international ranking, and often financing of universities depend mainly on their research tasks. Teaching is less measured, less valued and less remunerated. Moreover, research is (often) truly innovative (it needs to be), whereas teaching is sometimes seen as a burden and obligation.

We were told in interviews, that most professors have no formal education or training for their teaching. Rather, they earn their positions, and are promoted, due to the excellence of their research outcomes. Clearly, the assumption prevails, that being an excellent researcher and scientist automatically equals outstanding teaching, training and mentoring skills. Our research and conversations at universities confirmed as well, that effective and innovative teaching is not a key concern, and too seldom is applied, at today’s universities, neither do they reward and encourage the new and additional functions of the ... (teacher is too narrow a term): facilitator/tutor/mentor. Generalisations are of course impossible, especially between but also within universities. But the validity of the dilemma of “innovative research coupled with traditional teaching” is worth a discussion in each and every university.

4.2.4.4 Internationalisation vs. Endogamy

One of the most visible differences between (most) European universities and their homologues on other continents is their high degree of endogamy. Endogamy is defined as the ratio of teaching and research staff in a university, who received their initial higher education at (only) the very same institution.

While at leading universities on other continents scholarships abroad, research fellowships and
international experience are assets which boost academic careers, many of our interviewees confirm that in Europe the opposite is often true: those who leave and come back later, have lower chances of obtaining academic positions. It is rather rewarded to stay, and prepare for and lobby your way into, a position locally. At the same time, there is high overlap between low endogamy and international achievement of HEIs. A considerate shift into rewarding and demanding international study, research and work experience is needed for most European universities.

4.2.4.5 Exclusive vs. Inclusive Universities

The lack of cooperation between the universities and key actors in the national and regional authorities has been identified as a frequent problem. It is essential to strengthen cooperation between the authorities, universities and entrepreneurs for the benefit of the socio-economic development of the region, with one entity being responsible for it (such a role could, for example, be played by a national or regional Council for Higher Education and Science which could also act as a regional or local coordinator of the Bologna Process). Cooperation with external individuals and organisations should develop from (lose) interaction with to (regular and systemic) integration of external stakeholders into university matters and decision-making, at all stages.

4.2.4.6 Traditional University vs. Lifelong Learning Needs

Traditionally, universities were understood as institutions, in a building, with (young) students, and undertaking research and teaching, according to academic rules, within a national education system. However, structure, role in society, major functions, types of access, major actors, types of governance and modes of teaching have undergone significant change, and are bound to undergo further change in the future. Its key function was anchored in the education systems, with a clearly limited scope, target group, and function. University, for most of its stakeholders and clients, was linked to the function of gaining a final touch for their education, before passing through to the labour market (and never coming back). Via titles, certificates and awards, issued by universities and other institutions of higher learning and education, the “exit” to work life was legitimised and sanctioned. The “fat red line” between education and labour, as it is put in evidence in the scheme on the next page, the more varied and diversified the better, nevertheless stood for a one-way passage one was meant to “leave behind” once the formative phase of a life had ended.

However, as it can be seen from the following schemes, one absolutely crucial aspect of the discussion on HEIs is the fact that today’s needs and challenges are forcing universities to enlarge their range of action and stakeholders. In other words, they need to live up to the requests and necessity of Lifelong and Life-wide Learning – thus, the question arises: what can
universities do for one and/or the other? Clearly, universities need to adjust their offer to the newly emerging field of LLL. It is of particular importance, that any Lifelong Learning offer needs to be coupled with lifelong guidance.

Otherwise LLL is no longer an offer and opportunity, but is like a judicial sentence: we are condemned to learn constantly, but without knowing how and what: “a half life learning, the other half being kept in detention after school” (Austrian poet Gerhard Ruis in a sarcastic essay). In particular, adult learners need a different kind of offer and service by universities, as they have different expectations and needs, and according to research appreciate different aspects of university studies (empowerment, teamwork, links to professional practice, etc.).

In order to fulfil all these changing expectations and tasks, universities change: they are no longer restricted to a certain phase of life, age group, scope or “initial” education phase. They “splash” into the whole life duration, labour market and working area. Even more, they interact and merge with work, into a long period of “training and learning”, in parallel. After all, who, if not universities are best prepared in terms of history, background, reputation, knowledge and societal role, in order to answer this societal need to engage in Lifelong and Lifewide Learning?
The social function of higher education in the social models of the European knowledge society

Figure 23: Europe state 2000 and Europe of knowledge 2020
4.3. New Teaching and Learning Paradigmata

4.3.1. New Teaching and Learning Paradigmata

It has repeatedly been stated that HE teachers of the 21st century need other, new and more competences. Several contributions to volume 7c, partly researched and produced by NESOR, gravitate around the notion of changing learning needs, and hence, changing skills required from university “teachers”. The need, amongst others, the following core competences:

Instrumental competences

Mastering the subject they are teaching (concepts, procedures)

Planning and Management Interpersonal and Systemic Competences

Social roles and Professional Competences of an academic

Praxiological and Communicative Competences

Competences in cooperation

Information-related and Moral Competences

Instrumental competences

Capacity for analysis and synthesis.

Capacity for organisation and planning.

Grounding in basic knowledge of the profession.

Oral and written communication in your native language.

Knowledge of a second language.

Elementary computing skills.

Information management skills (ability to retrieve and analyse information from different sources).

Problem solving.

Decision-making.
<table>
<thead>
<tr>
<th>Mastering the subject they are teaching (concepts, procedures)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using varied methods and activities: acting and participative teaching explanations, case studies, group work.</td>
</tr>
<tr>
<td>Setting clear objectives and sharing them with students.</td>
</tr>
<tr>
<td>Organizing classes: planning and sequencing the contents, preparing teaching materials.</td>
</tr>
<tr>
<td>Explaining clearly: good communication, making new concepts comprehensible, giving examples, highlighting the important ideas.</td>
</tr>
<tr>
<td>Fostering intellectual development. Promoting autonomous (learning to learn) and creative learning.</td>
</tr>
<tr>
<td>Identifying the characteristics of students and bearing them in mind, always treating them with respect.</td>
</tr>
<tr>
<td>Showing enthusiasm for teaching and for the subject they are teaching.</td>
</tr>
<tr>
<td>Motivating students, spreading interest in the subject.</td>
</tr>
<tr>
<td>Awakening intellectual curiosity.</td>
</tr>
<tr>
<td>Creating a pleasant atmosphere.</td>
</tr>
<tr>
<td>Guiding and advising students, with concern for their learning and their problems.</td>
</tr>
<tr>
<td>Being accessible outside teaching hours.</td>
</tr>
<tr>
<td>Using diverse assessment methods making it possible to check the students’ learning and to promote the lecturer’s self-assessment.</td>
</tr>
<tr>
<td>Generally applying ICTs within the subject.</td>
</tr>
<tr>
<td>Applying research techniques in the classroom.</td>
</tr>
<tr>
<td>Working as a team with the other lecturers to improve curricula and teaching in general.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Planning and Management Competences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selecting and preparing the contents.</td>
</tr>
<tr>
<td>Offering comprehensible and well-organized information and explanations (communicative competence).</td>
</tr>
<tr>
<td>Handling new technologies.</td>
</tr>
<tr>
<td>Designing methodology and organizing activities: spaces, method, autonomous work by students.</td>
</tr>
<tr>
<td>Group work selection of varied, relevant tasks.</td>
</tr>
<tr>
<td>Communicating and relating to students.</td>
</tr>
<tr>
<td>Tutoring and Assessing.</td>
</tr>
<tr>
<td>Reflecting and doing research on teaching.</td>
</tr>
<tr>
<td>Identifying with the institution and working in a team.</td>
</tr>
</tbody>
</table>
### Interpersonal competences
- Critical and self-critical abilities.
- Teamwork.
- Interpersonal skills.
- Ability to work in an interdisciplinary team.
- Ability to communicate with experts in other fields.
- Appreciation of diversity and multiculturality.
- Ability to work in an international context. Ethical commitment.

### Systemic competences
- Capacity for applying knowledge in practice.
- Research skills.
- Capacity to learn.
- Capacity to adapt to new situations.
- Capacity for generating new ideas (creativity).
- Leadership.
- Understanding of cultures and customs of other countries.
- Ability to work autonomously.
- Project design and management.
- Initiative and entrepreneurial spirit.
- Concern for quality.
- Will to succeed.
Social roles of an academic

Enormous challenges confronting the system of higher education attract more and more interest among representatives of social sciences, especially among scholars in the field of pedagogy and sociology of education, who are particularly concerned with issues such as professional competences of academics, their qualifications and skills, as well as the meaning of the academic-student relationship. From the point of view of sociologists, they result from a specific social role that is fulfilled by academics in contemporary times. It is a role, which evolves together with the development of civilisation. The social role of an academic is defined in sociological literature in many different ways.

Apart from being an authority in the field of science, the teacher is also successful in educating and bringing up his or her students. He or she is “simultaneously a teacher, advisor, inspirer, ‘stimulator’ and a supervisor who cares about work conditions for students entrusted to his or her care” [Gulda 1996, p. 139-140]. In fulfilling this role, one must have wide knowledge about the nature of social phenomena taking place in the world, regardless of the pursued scientific discipline. In the case of a teacher-master, this knowledge manifests itself as true wisdom that commands respect from students. The role of an academic as an educator is based on the principles of “treating students with kindness and due respect”, “constant work on improving the quality of teaching” and helping students to “develop as independent and critical thinkers” while respecting their right to express their opinions freely, also in scientific matters” [Scientific Ethics, Committee of the Polish Academy of Sciences (PAN) 1994].

Professional competences of an academic

Among numerous postulates for changing the system of higher education, there is one which calls for changing the perception of the role of an academic [Jaskot 1996, p. 12-13]. Changes in this area are particularly difficult to bring about, because they make it necessary for the teaching staff to acquire new competences (interaction, negotiation and organizational skills, as well as leadership and partnership qualities) and to rethink their own attitudes to teaching. No academic can feel completely prepared for this profession, because his or her competences must be constantly developed. In addition, an academic must have a certain set of personality traits [Michałik-Surówka 1998, p. 287].
Praxiological Competences

Praxiological competences manifest themselves as the effectiveness of an academic in planning, organizing, implementing, supervising and assessing an educational process. These competences include e.g.:

- the ability to prepare a general concept of work with a given group of students and cooperation with the academic community.
- the ability to assess the initial state of students’ preparation for their studies and to identify factors that will organize their further development.
- the ability to operationalize the general objectives of an education process at a higher education institution and to program the content of education in one’s own discipline in order to achieve them.
- understanding the need and being able to personalize educational projects, depending on the potential of individual students and material and cultural conditions at the higher education institution in which he or she works.
- the ability to make proper use of an array of teaching methods and skills of an academic, such as teaching and self-teaching methods, technical teaching aids, different organizational forms of classes at the university and in other settings.
- the ability to generate and maintain positive motivation of students to foster their development – both general and relating to their chosen discipline.

Communicative competences

Communication-oriented competences relate to the effectiveness of language behaviour in the process of education and in interactions with students. They include e.g.:

- possessing knowledge about interpersonal communication and the ability to use it for educational purposes.
- the ability to think dialogically and to develop this ability in students.
- understanding the specific character of educational dialogue and the ability to use different discourse techniques and non-verbal language in communicating with students.
- possessing the ability to listen to students, being able to emphatically understand their intentions and the meaning of what they say.
- the ability to communicate one’s feelings and teaching this skill to others.
- understanding and accepting different language codes used by students and using them to foster their development.
Competences in cooperation

They manifest themselves as the effectiveness of pro-social behaviour and the integrating potential of activities undertaken by an academic. These competences include e.g.:

- understanding the correlation between one’s professional attitude and possessed personality characteristics, one’s preferred style of interaction and social processes taking place in interactions with students.
- the ability to solve conflict situations by means of negotiation and compromise.
- giving preference to the rule of responsibility over the rule of obedience in contacts with other people and the ability to act in accordance with this preference.
- the ability to inspire and use the initiative of students to foster their own development;
- the ability to satisfy the students’ expectations, to appreciate their individual potential and use this potential to stimulate maximum learning in cooperation with others and with the teacher.
- the ability to establish and maintain contact with the student by using a wide range of techniques (e.g. preferring to communicate feelings to communicating assessments).

Information-related competences

They can be described as the ability to use modern sources of information effectively. These skills include e.g.:

- foreign language and “computer language” skills.
- the ability to use information technologies to aid learning processes, both their own and those of students (e.g. using databases, the Internet and electronic mail).
- the ability to draw up one’s own programmes in one’s discipline and make them available in the Internet for the purpose of exchanging experience.

Moral competences

Moral competences manifest themselves as the ability of deep moral reflection in the assessment of any ethical deed. Such competences include:

- awareness of one’s own ethical duties with respect to the subjects of education.
- the ability of profound moral reflection in assessing any ethical deed.
- the ability to ask oneself questions about the limits of ethical validity of professional actions, the limits of joint moral responsibility for the development of a student and the extent to which the teacher should be treated as a causative factor.
In conclusion, it can be stated that higher education institutions should not see themselves as administrators or transmitters of codified, dominant knowledge, but as an “environment” which is a source of comprehensive learning and knowledge resources. In such an environment, the promotion of “lifelong learning” begins with changing the awareness of academic teachers and reorganizing chosen areas of educational institutions.

At a general level, the following strategies should be adopted by these universities, in order to live up to the above challenges:

- autonomy for flexible training;
- evaluation for transparency;
- inclusion of disadvantageous groups for social inclusion; and
- closing the mismatch between qualifications sought and qualifications available (e.g. in relation to social skills, problem solving or the need for flexible individuals in mind and thought).
4.4. Examples of Innovation

4.4.1. Experiences of Innovative Universities

Transnational Lifelong Learning

DANUBE UNIVERSITY, KREMS / AUSTRIA | SPECIALISED REGIONAL SEMI-PUBLIC SEMI-PRIVATE

*Innovative Action* | Brands itself as a Transnational Lifelong Learning University

*Effects on organisation* | Sees as part of its mission a broad offer of advanced or postgraduate training, and highly specialised courses, seminars, diplomas and degrees which respond to new trends on the labour market (e.g. M.A. in intercultural competences)

*Effects on activities* | Besides regular full-time staff, high number of external lecturers from the economy or public administration

*Effects on learners* | Students are a mix of under-graduates, and people who already work for several years, and either chose for further studies towards a higher degree, undertake specialised training in agreement or with support of their employers, or in form of a sabbatical leave

*Resulting recommendation for others* | Particular attention to older (than usual undergraduate) students and their needs, and active recruiting of students trans-nationally.

www.donau-uni.ac.at

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Career Centre

UNIVERSITY OF VIENNA / AUSTRIA | GENERAL PUBLIC UNIVERSITY

*Innovative Action* | UNIPORT Services: Career-Information, Jobs and Internships, Coaching and Workshops, Career-Fairs and Recruiters’ Night.

*Effects on organisation* | Allows for intensive contacts with future employers of graduates; Job fairs and public events on skills needs from the labour market.

*Effects on activities* | Collection of employers’ input for curriculum development.

*Effects on learners* | Students and graduates learn about current requirements on the labour market, and can establish direct contact with prospective employers; Advise on career planning and LLL options.

*Resulting recommendation for others* | Moving from occasional interaction to structural integration of industry and companies is an important step forward to offer curricula and skills which are no longer outdated but prepare students for a changing work environment.

www.univie.ac.at studentpoint.univie.ac.at/index.php?id=306 www.students4excellence.at
## Training Faculty

UNIVERSITÀ DEGLI STUDI DI VERONA / ITALY | GENERAL PUBLIC UNIVERSITY

**Innovative Action** | Training Faculty, M.A. programme in Intercultural Education; Centre for Intercultural Studies, and Cooperation with Schools.

**Effects on organisation** | Allows for immediate testing of new research results in practice, feedback from implementation, and up-dated in-service teacher training.

**Effects on activities** | High relevance of research for practice; Swift implementation of new theories and practices.

**Effects on learners** | Broad group of learners: from under-graduates to graduates and practitioners; (university) Students and (school) teachers research and work jointly: improvement of school system through teacher training.

**Resulting recommendation for others** | University reacts on today’s problems with ongoing research and training for practitioners – high degree of cooperation and cohesion.

[www.formazione.univr.it/fol/main](http://www.formazione.univr.it/fol/main)

## Inclusion of soft skills

UNIVERSITY ROVIRA I VIRGILI SCHOOL OF CHEMICAL ENGINEERING, TARRAGONA / SPAIN | TECHNICAL

**Innovative Action** | Inclusion of soft skills into the curriculum of Chemical Engineers, industrial engineers and biotechnologists.

**Effects on organisation** | ChE students acquire and integrate technical and scientific knowledge through the gradual development of social and management skills.

**Effects on activities** | A module has been developed and implemented to facilitate the transition of first-year ChE students into a project-based learning environment. All first-year students participate in the first-year integrated design project with fourthyear ChE students acting as project managers.

**Effects on learners** | The expertise in team development and change management methodologies, gained from nearly a decade of implementation work, has complemented the practice of the ETSEQ with experiential learning methodologies. The core of the competency-based educational model is client orientation.

**Resulting recommendation for others** | Preliminary results: student attendance has increased, drop out has decreased, more professors act as facilitators in the classroom, and active-oriented and student-centered educational methodologies are increasingly applied.
Improvement of transitions to higher education

GENERAL UNIVERSITY, THE NETHERLANDS

Innovative action | Several Dutch general universities and polytechnics have developed programmes to attract more students in the beta- and technical disciplines. They often particularly focus on female students, underrepresented in the sciences departments.

Effects on organization | Tutoring and mentoring systems have been introduced. In specific cases, ‘linking’-courses were offered to students to prevent them from dropping out early because of problems with specific subjects (mathematics).

Effects on activities | One of the general universities has developed a program, which, besides promotion activities, contains several measures aimed at improving relations with secondary schools and transitions from secondary schools to the university.

Effects on learners | Contacts with schools improved. The number of students increased. Staff and students got extra opportunities to establish contacts with future students and to participate in joint projects with supplying schools.

Resulting recommendations | Direct contacts between universities and pupils are a good way to inform (potential) students, that open-door initiatives further realistic expectations and that good mentoring and tutoring systems might prevent early drop-out.

Reinforcement of employability of graduates

GENERAL UNIVERSITY, THE NETHERLANDS

Innovative action | Dutch universities, polytechnics and professional colleges are increasingly aware of the need to strengthen the labour market position of graduates by reinforcing their employability.

Effects on activities | One of the Dutch general universities has split the physics master into 4 differentiations: research, management master, educational, communication. Graduate physicians nowadays are not only employed in traditional fields like research and teaching, but also in management, marketing and communications.

Effects on organisation | Upgrading of the function of teaching in academic practice at the university. Though research still is the main reference point for staff accountability, teaching has gained status.

Effects on learners | Such programmes open up opportunities for flexibility in the design of learning trajectories. Programmes get a more modular structure, with the emphasis on specific (blocks of) courses.

Resulting recommendations | Multidisciplinarity as an instrument both for attracting new groups of students as well for reinforcing the labour market position of graduates.
Promotion of life long learning

OPEN UNIVERSITY, THE NETHERLANDS

Innovative action | Adult, older persons will become a target group for institutes of higher education, as life long learning gains importance in the future. Actually, the supply of education for adult people is limited, however, in the Netherlands.

Effects on organisation | OU has established a network with schools for higher professional education to develop tailor-made programmes that can be used as a ‘second learning route’ for adults. Older people can get a bachelors degree with this system.

Effects on activities | OU offers e-learning facilities, that make it easier for students to connect learning (at the college) and working activities (at their job). The services will use new didactical approaches, like blended learning, work-based learning, learning communities, open educational sources etc.

Effects on learners | These courses are targeted to the needs of older persons, who want to take a second chance to follow an academic study, make a further step in their career or improve their position on the labour market.

Resulting recommendations | The need for life long learning will increase in the increasingly flexible labour markets of the future.

Development of relationships with the business community

COLLEGE FOR HIGHER PROFESSIONAL EDUCATION, THE NETHERLANDS

Innovative action | Stimulation of entrepreneurship in higher education is a highly favoured instrument of policy makers in the field of technology and economy. An entrepreneurial attitude is considered to be an essential qualification for graduates.

Effects on organisation | Regional network of businesses, lecturers and teachers, called a ‘smart business centre’. The goal of the centre is to develop and apply knowledge in a collaborative way to add value for small and medium sized companies.

Effects on activities | Together with the university of the region the centre participates in a joint initiative to support start-ups in the technical field. Support includes business case diagnosis, coaching and mentoring of the entrepreneurs, cheap financial credits, housing and laboratory facilities.

Effects on learners | Business centres and start-ups are instruments that can bridge the gap between institutes for higher education and research and the business community.

Resulting recommendations | It is not easy to start such ‘economic’ centres within a primary ‘educational’ environment. Recommended are a pragmatic approach, good internal communications, direct relationships with the businesses and enthusiast people.
Dual learning in higher education

COLLEGE FOR HIGHER PROFESSIONAL EDUCATION | GENERAL UNIVERSITY, THE NETHERLANDS

Innovative action | During the nineties dual or work-based learning was introduced in higher professional education, also in academic education.

Effects on organisation | An example is the so-called ‘SME-road’ in higher professional education. This is a combined learning and working trajectory, in which a student first gets 3 years of fulltime education at the institute.

Effects on activities | In principle, dual programmes combine learning inside with learning outside the HE institute. However, the practical part, i.e. work in an authentic environment, can also be simulated within the university by creating conditions, which resemble real-life work situations and problems as much as possible.

Effects on learners | Dual learning might complicate the programme for learners because they deal with at least two different learning environments (school and work).

Resulting recommendations | Evaluation by the government revealed that it was clearly considered as ‘academic-plus’ by all actors involved. However, a better definition of competences and concepts for the practical part and an explicit structuring of learning plans of individual students were recommended.

E-learning in higher education

TECHNICAL UNIVERSITY, THE NETHERLANDS

Innovative action | A recent evaluation by the government reveals that HE institutes have a proper and good ICT-infrastructure now.

Effects on organisation | Blackboard as a digital learning environment has been fully implemented by now. Links have been realized with support systems, such as control of study progress, digital study documents and the exams administration. However, less developed are activating and ICT-linked educational teaching and learning forms.

Effects on activities | ICT is mainly used for information supply purposes, administrative functions and standard applications. It is less used for substantive communication with students and for examining. Less developed e-based teaching and learning forms.

Effects on learners | The effects on the learning process itself have been rather limited until now. Half of the teachers are dissatisfied about technical support with courses. About two third of all teachers are dissatisfied about didactical support related to ICT.

Resulting recommendations | ICT is not simple a matter of dropping blackboards and notebooks, it requires a constant revision of didactical materials and a constant exchange of experiences within the teaching community.
Joint interuniversitary education and research networks

TECHNICAL UNIVERSITIES, THE NETHERLANDS

Innovative action | A couple of years ago the 3 technical universities in the Netherlands decided to establish a foundation - called 3TU - for joint education and research, which probably will be the first step towards a federation. Three fields are covered by the initiative: education, research and valorisation of knowledge.

Effects on organisation | For education the universities cooperate in a joint graduate school, which offers a number of joint masters. Students can choose between a broader spectre of technical master programmes now.

Effects on activities | The initiative does not imply a principal change of activities. Education, research and valorisation of knowledge remain the basic activities.

Effects on learners | Students can easily switch to a joint master programme and choose between a broader spectre of technical master programmes.

Resulting recommendation | Departmental units give up some of their autonomy as regards research and education. This is easier if benefits are well balanced. A balance of benefits is easier to establish when research is (partly) complementary and different research groups can create extra mass and focus by combining their respective strengths.

Valorisation of academic knowledge in practice

GENERAL UNIVERSITY, THE NETHERLANDS

Innovative action | Societal impact of fundamental research and knowledge as an important policy objective. Different types of activities and by collaborating with major corporations and the establishment of spin-off companies.

Effects on organisation | Relevant organisational changes in this respect are enlarging the amount of applied research activities on behalf of third parties and the valorisation of educational activities by organizing post-initial education. Also important are the introduction of an internal patent regulation. A third important point of attention is the activities directed at initializing spin-off companies.

Effects on activities | With respect to spin-offs, the university belongs to the national top scorers of universities initializing spin-off companies.

Effects on learners | This is not an initiative for students, so effects on learners are limited. There are labour market effects, however, for graduates. Resulting recommendations | A separate unit and specific facilities might be helpful to establish successful spin-offs. Furthermore, there should be a commitment from university management to the objective of valorisation of knowledge.
4.5. Future Universities and University of the Future

4.5.1. Future Universities and University of the Future

Where are European universities on the continuum between Inertia of (many) universities vs. Innovation of knowledge economy? If the future university is to reflect the characteristics of the so-called knowledge economy, universities will become: borderless (in time, space, geography), accessible to all (meaning any kind of diversity); virtual (combining presence, distance and ICT offers of cooperation and study); applying modern and electronic learning management systems. In other words, also in terms of logistics, definitely in terms of content and objectives, and last not least in terms of image and strategy, also universities must see it as a cornerstone of their identity to be innovative and flexible.

A diverse knowledge base, including different people, also people who do NOT fit into the traditional image of university personnel, decentralised structures, self-responsible organisational units and individuals are only some of the consequences of taking “diversity” at face value, throughout all aspects of HE policy and practice. A strong orientation to outside world (“universities as sites of global citizenship” – see the “International Study Programme” of the Salzburg Seminar) is yet another component of acting, contributing to – and surviving in – the global context, competition and cooperation HE is today exposed and living in.

In this exercise, it is useful to adopt a future-oriented approach: starting from the present and imaging the future. Imagine 2050: the trends we have observed have consolidated, the role of HE will be radically different from the present situation.

The difficulty is obvious: are we able to depict a real picture of the future or do we merely reproduce the future that we want to have? Trends observed in past may continue or not. How then to use imagination and to create a new vision/picture, and plausible scenarios for HE. Clearly such broad exercises go beyond the scope of this Brief, and NESOR.
Nevertheless, some trends will continue without any doubt. In the future, universities will have:

More independency;

Focus on LLL;

Intensified connections with society, science and industry;

More foreign students and international mobility;

New areas of interest (to be funded): e.g. Nano-, Biotechnology;

Higher diversity: HE will specialize on key areas and be connected strongly via international interactions; also internally, HEIs will have to reflect diversity in society;

In front of all these trends, developments and changes, and in order to minimize social risks that will appear in the future and can not be avoided, measures have to be introduced, e.g. substantially more student-loans, more grants and scholarships – to name only the most obvious ones.

Beyond teaching activity, and in addition to research, the future university is mainly adopting the function of a learning (and virtual learning) organization. Access to the future university is longer limited to certain age groups or social strata, but is truly universal, for everybody. Main actors and focus of attention are no longer professors or researchers (along) but a highly diversified group of learners. Governance is increasingly influenced by competition and market rules, given that universities are already part of a service economy. Finally, teaching is no longer uni-directional or addressed to a group of students, but is personalized, dove-tailed to the needs of individual learners.
Table 24: Changing University Organisation

<table>
<thead>
<tr>
<th>ORGANIZATION</th>
<th>MEDIEVAL</th>
<th>MODERN</th>
<th>FUTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRUCTURE</td>
<td>Academic community, knowledge-community</td>
<td>City, ideopolis</td>
<td>Knowledge-networks</td>
</tr>
<tr>
<td>ROLE IN SOCIETY</td>
<td>Knowledge dissemination</td>
<td>Knowledge discovery and understanding (institutionalization of science in the university)</td>
<td>Learning and teaching within and for KBS, obligation to society</td>
</tr>
<tr>
<td>MAJOR FUNCTION</td>
<td>Teaching</td>
<td>Teaching, research</td>
<td>Learning, virtual learning</td>
</tr>
<tr>
<td>TYPE OF ACCESS</td>
<td>Elite</td>
<td>Mass + Diverse</td>
<td>Universal</td>
</tr>
<tr>
<td>MAJOR ACTORS</td>
<td>Teachers</td>
<td>Researchers</td>
<td>Learners</td>
</tr>
<tr>
<td>MAJOR CLIENTS</td>
<td>Scholars</td>
<td>Students</td>
<td>Students, adults, etc. - all</td>
</tr>
<tr>
<td>TYPE OF GOVERNANCE</td>
<td>Control</td>
<td>Deregulation, Privatisation</td>
<td>Market oriented</td>
</tr>
<tr>
<td>MODE OF TEACHING</td>
<td>Lecture</td>
<td>Seminar, creative education, problem solving</td>
<td>Personal instruction, team work, LLL, e-learning, e-tutoring, e-portfolio, etc.</td>
</tr>
</tbody>
</table>
4.6. Recommendations for Policy

4.6.1. Level of a higher education institution

As it appears from NESOR interviews, the academic community knows little about the aims of the development policy of the EU and national governments (with the exception of representatives of university authorities and scholars who work on these issues in their research). Therefore, information and educational activities should be organized for academic teachers to increase their knowledge on the Bologna Process and the Lisbon Strategy.

At the level of HEI/Universities this is not always evident: academics fields have different needs. Different HEIs have different needs; their design strategies, thus, are based on this diversity.

In contrast, clearly the Future University anywhere is characterized by a ubiquitous and uninterrupted structure, no longer dependent on a certain location of timeframe. Universal Higher Education is available permanently and everywhere. In addition to previous functions of universities where knowledge is not only disseminated, but the institutionalizations of science is embodied in the university, in future learning and teaching takes place within and for the knowledge-based Society, both as an obligation to society, and reflecting the industrialization of science in the economy.

In conclusion, the future university will be characterised and needs to adapt its structures, in order to find specific replies to these universal challenges for global HEIs:

- **Knowledge-networks**
- **Learning and teaching within and for KBS,**
- **Obligation to society**
- **Learning, virtual learning**
- **Universal learners (students, adults, etc. – all)**
- **Stakeholders-oriented and Market-oriented**
- **Personal instruction, team work, LLL, e-learning, e-tutoring, eportfolio, etc.**
In terms of Management Requirements, the following steps are advisable at institutional level:

- **Allow diverse institutional forms between and within universities;**
- **Focus less on administration, more assessment of added value when implementing the Bologna requirements;**
- **Create effective feedback mechanisms with all stakeholders;**
- **Act proactive rather than reactive;**
- **Install project-based, flexible management;**
- **Establish an operational budget for acquisition and innovation**
- **Target CEE & SEE and enlargement (instead of students & scholars looking and moving exclusively to the West)**

Translated into agenda points for an individual HEI today, the global and external developments result in the following challenges and new tasks for many of the universities screened in the research:

- **To overcome the strong separation between education and professional training**
  - To start engaging also in sub-standard (sub-HE) education levels, like vocational qualifications
  
- **To undertake and deliver research which is no longer irrelevant to labour market developments**
  
- **To anticipate and counter-act existing and potential social exclusion**

The following Figure 24 visualises different functions of university in a society, and their repercussions on university stakeholders. As a consequence of new relations of the university with the world outside the campus, Figure 24 (next page) characterises the changing role of university stakeholders. In the early stage, as relationships are established, stakeholders have a relatively passive role as a relevant interest group. As contact and involvement increase their role is still often as an informed outsider, invited to comment and offer constructive criticism – to be ‘critical friend’. Once incorporated with a role in the formal processes, stakeholders become integral to normal quality assurance systems, policing outcomes. In a partnership relationship, their role is more akin to a full member of the course/programme team, and they share in the return for the improvement of that programme.
### Table 25: Investments in partnership / benefits

<table>
<thead>
<tr>
<th>FOR THE STUDENT</th>
<th>FOR THE HE INSTITUTION</th>
<th>FOR THE COLLABORATING ORGANIZATION</th>
<th>FOR THE ‘PARTNERSHIP’</th>
</tr>
</thead>
<tbody>
<tr>
<td>The application of THEORY IN PRACTICE</td>
<td>Essential to fulfill the REQUIREMENTS of professional / vocational education</td>
<td>More information for RECRUITMENT of employees</td>
<td>MUTUAL understanding</td>
</tr>
<tr>
<td>Developing REFLECTIVE PRACTICE</td>
<td>Integration into the LOCAL / regional community (networks build on associated networks)</td>
<td>Enhancement of PRACTICAL TRAINING of potential / actual employers</td>
<td>SHARED experience</td>
</tr>
<tr>
<td>Developing generic, transferable skills in practical ‘REAL WORLD’ situation</td>
<td>NETWORKS produce new and different opportunities</td>
<td>Renewal / updating of PROFESSIONAL APPROACHES through student input</td>
<td>RECIPROCITY exchange integration</td>
</tr>
<tr>
<td>More effective ACCESS to the job market</td>
<td>Provides INFORMATION / EVALUATION for quality enhancement of programmes</td>
<td></td>
<td>Enhanced PUBLIC IMAGE / mutually reflected status</td>
</tr>
<tr>
<td>A chance to TEST the career choice</td>
<td>A mechanism for MARKETING University programmes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop specific professional COMPETENCES</td>
<td>Locates the University at the CUTTING EDGE of new developments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A chance to develop CONFIDENCE in the professional context - transition from study to work</td>
<td>Provides MARKET RESEARCH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A chance to LEARN BY MISTAKES in a supervised / safe environment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 24: developing relationship with labour market stakeholders
Also, Figure 25 presents the stages in which HE institutions could be seen to develop more effective, systemic relationships with labour market stakeholders. It can also be seen as a ‘diagnostic continuum’ on which HE institutions might locate themselves, to assess their progress in developing such relationships. Typically different institutions in the same country, and different professional/vocational areas within the same institution, might reasonably locate themselves at different points on the continuum.

The continuum suggests a process that is seen to begin with simple ‘Interaction’ with stakeholders, but can culminate in a relationship characterised by the ‘Integration’ of respective aims and activity. This process can be seen as a number of phases conceived of in terms of the functional and relational aspects of quality assurance: that the early phase can be characterised as ‘Contact-Building’, which itself can develop from establishing initial relationships and informal networks to more regular, routine contact, and, if still informal, role.

As such relationships become more normative over time, with the involvement of stakeholders directly influencing aspects of development and programme delivery, involvement in the formal quality assurance processes may be perceived by both sides to be positive. This phase is characterised as ‘Structure Building’ (functional) - the formal structured participation of stakeholders in approval, monitoring and review, and in teaching, learning and assessment – those elements defining outcome standards and the student experience.

As these patterns of participation become first regarded as legitimate, and second, a requirement for the proper endorsement of standards, the boundaries between the HE institution and the external stakeholder organisation, in relation to the relevant course/programme, can become more blurred; concepts of the course/programme team cross these boundaries to include stakeholders; and respective roles are merged and exchanged.

This may lead to further review of the formal processes themselves and the definitive involvement of stakeholders as crucial reference points for relevant learning outcomes/competences. As the relationship develops, the creation of a dialogue with stakeholders through more regular and routine involvement establishes and recognises the significance of stakeholder input to course/programme development, i.e. as a development model (Figure 25).

Such more formal involvement by stakeholders in QA processes is effectively the formal incorporation of stakeholder expertise as input to these processes. When institutions enter into partnership type relationships with stakeholders, the process is one of joint development of the programme as one dimension of a more strategic relationship.
Figure 25: Model of Development
4.6.2. **National level**

A problem, which is currently affecting the socio-economic development policy of many countries is a large number of strategic documents produced by successive governmental teams and the lack of continuity and complementarity between them. It is necessary to formulate a cohesive and consistent policy of the State, which incorporates short-, medium- and long-term plans and is aimed at building the knowledge society in European countries.

The role of public statistics is very important, because it provides a basis for assessing the progress achieved in the creation of the knowledge society and formulating a vision for the future. Due to the main objectives of the Lisbon Strategy, the studies of public statistics should focus on the labour market and the issues of employment (so far, they have mainly concentrated on the problems of unemployment). Many strategies for higher education were drawn up in the past years, but have never been approved and adopted. However, there is a need for formulating a separate and sustainable development strategy for higher education in each country. In such strategy, the role of higher education institutions in creating the Europe of Knowledge must be taken into account.

To put into practice the ideas set out in strategic documents concerning higher education, the responsibility for implementing the Bologna Process should be assigned to one entity at the national level (as currently, in many countries a too large number of entities are involved in the fulfilment of the Bologna Process).

4.6.3. **EU level**

Any considerations on the role of the EU in Higher Education need to start with addressing the questions: Do we (really) want a European HE policy?

Obviously, like in any other policy sector, tensions between EU and national levels exist. For example, the principle of the global Lisbon Competitiveness clearly clashes with the Social Responsibility of Universities in their municipal, regional or national context.

In conclusion, fully in line with occasional Commission documents, also accumulated NESOR findings insistently stress the fact that:

Lifelong and Lifewide Learning (and de-learning) will become the rule for education clients and providers all across Europe.
Increasing blurring of education and work throughout whole life and within society, is already taking place – hence the increasing number of learning organisations, learning regions - and the notion of a learning (European) citizen.

Moreover, Lifelong/Lifewide Learning needs to be coupled with Lifelong/Lifewide Career Advise and Guidance.

Continuing Education will become more important than initial training

Universities will (need to) expand their activity into the labour market and for all age groups

Content will be more a mix of (less) knowledge provision, (more) skills training, and (predominantly) learning to learn

As far as the EU is concerned, more mobility is desirable, hence the expanding of student mobility programmes like Erasmus and Erasmus Mundus…

Finally, also (higher) educational policy has to be seen as part of social policy, in order to combat growing differences between countries and citizens!
5. Literature


The social function of higher education in the social models of the European knowledge society


BAUMGARTL, B. & MARIANI, M. (2008a) To there form here. Relevant Practice from higher education institutions. Series navremelprint No. 7a, in cooperation with NESOR Vienna.


The social function of higher education in the social models of the European knowledge society


The social function of higher education in the social models of the European knowledge society


DE MIGUEL DIEZ, Mario (Dir.) (2005) Modalidades de enseñanza centradas en el desarrollo de competencias orientaciones para promover el cambio metodológico en el espacio europeo de educación superior. Oviedo.


The social function of higher education in the social models of the European knowledge society


EUROPEAN COMMISSION (2005a) Mobilising the brainpower of Europe: enabling universities to make their full contribution to the Lisbon Strategy. [COM(2005) 152 final


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EUROPEAN MINISTER OF EDUCATION (2003) Realising the European higher education area. Communiqué of the meeting of European Ministers responsible of higher education. Berlin. [BERLIN COMMUNIQUE]

The social function of higher education in the social models of the European knowledge society


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The social function of higher education in the social models of the European knowledge society


GULDA H. 2001, Wyzwania edukacyjne wyznacznikiem nowej roli nauczyciela akademickiego, in Pedagogika Szkoły Wyższej Nr 17, s. 60-68.


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STRATEGIA POLITYKI SPOŁECZNEJ NA LATA 2007-2013 (2005), Ministerstwo Pracy i Polityki Społecznej, Warszawa

STRATEGIA ROZWOJU EDUKACJI NA LATA 2007-2013 (2005), Ministerstwo Edukacji Narodowej i Sportu, Warszawa


STRATEGIA ROZWOJU KSZTAŁCENIA USTAWICZNEGO DO 2010 (2003), Ministerstwo Edukacji Narodowej i Sportu, Warszawa

STRATEGIA ROZWOJU NAUKI DO 2015 ROKU (2007), Ministerstwo Nauki i Szkolnictwa Wyższego, Warszawa


The social function of higher education in the social models of the European knowledge society


THUROW L. (1975), Generating Inequality, New York


WOLF, H. (200) Das Netzwerk als Signatur der Epoche? Anmerkungen zu einigen neueren Beiträgen zur soziologischen Gegenwartsdiagnose. in *Arbeit*, Heft 2, Jg 9, pp. 95-104.


NESOR ("New Social Risks and the role of universities") proposed to revise the reference model of the Lisbon Strategy – the knowledge based society and economy – and the emerging new social inequalities based on the disposability and the use of knowledge in this society, to look for the contribution of the universities to combat the new forms of social exclusion and to elaborate a model of higher education in the globalised knowledge based society.

NESOR has been a research project funded by the EU Socrates Programme, has undertaken some 150 interviews with HE experts and University managers, has produced some 20 national reports and 4 transnational reports, has held some 10 focus groups and national conferences, and has organised 3 international conferences with internal and external speakers.

Moreover, it has assembled a series of national reports, a (non-academic, policy relevant) book which explores the issues at stake from an institutional point of view and a series of publication assembling the presentation of the final conference held in Barcelona in January 2009. All these documents are available at www.dia-e-logos.com.

The NESOR-consortium has formulated an ambitious research project on the social function of higher education putting emphasis on the educational function of higher education. However, the consortium was conscious that this ambitious research plan could only realised in form of a tentative research. The budget restriction allowed only making brush strokes on these issues. But resumed in the present academic book bringing together the main findings of the projects, this brush strokes give valuable indicators of the critical points of the actual European and national strategies on higher education towards the knowledge society and underpins the need to discuss in depth the social function of the higher education not only in terms of employability, but also in terms of social equity and of social risks. The intended or unintended generalisation of higher education will change profoundly the system itself, but as a driving force of social-cultural and economical change it will impulse in medium and long term profound changes in the European society, which will go beyond the Lisbon strategy.

Project partners are:

Universitat de Barcelona | ES – coordinator
Departament de Geografia Humana

Università di Modena e Reggio Emilia | IT
Scienze Sociali

University of Nijmegen | NL
Institute for Applied Social Science

Academy of Sciences | HU
Institute of Sociology

University of Lodz | PL
Department Sociology of Education

navreme wissensentwicklung GmbH | AT