Good practices in SME Cluster initiatives. Lessons from the ‘Core’ regions and beyond.

Arnoud Lagendijk, 8 November, 1999
COperation of Regions in Europe –
A Partnership Approach to Business Development

European research on regional business cluster policy
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Partners:

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Executive Summary

How can support to SMEs be improved in such a way that it contributes to regional employment and wealth? One strategy that has been developed over the last decade is the ‘cluster’ approach. Through the regional cluster approach, business support is provided not in a generic form, but targeted at certain business groups. Within the targeted groups, the regional cluster approach seeks to improve business performance through facilitating networking and the instilling of collaborative attitudes among firms and with support organisations. The cluster approach thus works on the ‘soft side’ of regional economic development. It tries to make firms more aware of how, through working together and working with regional agencies, they can improve business performance, and contribute to regional development.

The lessons drawn out in this report stem from the analysis of cluster initiatives in the so-called ‘CORE’ regions. CORE was a project running from 1996 to early 1999 funded under the EU ADAPT programme. The aim of CORE was to develop innovative approaches to business support by supporting practical support programmes as well as research. Besides a more general discussion of the cluster concept, the present project analysed the following cluster initiatives in the CORE regions:
1. Hessen (automotive and environmental businesses)
2. Northrhine-Westphalia (NRW) (automotive, environmental-chemical)
3. Aragón (wine production)
4. Tyneside in North East England (automotive, marine industries, business services, among others)

The selection was based on the actual policy initiatives found in the CORE regions. The research methodology consisted of on-site expert interviews and the analysis of policy documents and policy reviews.

During the project, one of the main problems was to come to terms with the different interpretations of ‘clusters’ (Table 1) and the different ways cluster initiatives were designed and implemented. Despite this handicap, the study was able to identify common factors in the cluster initiatives and to distinguish various elements of good practice. The following points summarise the conclusions from the research and give an overview of what has been found good practice in cluster approaches.
Table 1  Six changes in the conceptualisation of ‘clusters’ identified in the report

| 1. | Perceiving of clusters as an analytical model, derived from observations of the dynamics of co-located interrelated industries (Porter’s Competitive Advantage of Nations) |
| 2. | Associating clusters with spatial agglomeration (introducing the concept among geographers) |
| 3. | Linking clusters to concepts of innovation (notably to the notion of ‘systems of innovation’), moving the concept further into the arena of policy-making |
| 4. | Building a bridge between clusters and an associative approach to economic development (toning down the ‘rivalry’ element in the original cluster approach) |
| 5. | Gearing cluster approaches towards the development of SMEs (inciting a close marriage with the notion of networking), introducing the concept into the arena of business development |
| 6. | Inserting the cluster concept in various ongoing debates, such as the ‘learning economy’, ‘traded’ vs. ‘untraded’ linkages, the local-global nexus, and issues of regional specialisation; here the difference between clusters as analytical model and policy strategy is increasingly blurred |

1  A strategic approach

The regional cluster approach is not just another form of delivering regional support to SMEs. The innovative aspect of the cluster approach is that it frames business support in a regional strategic perspective. This means, in practice, that cluster initiatives, by helping groups of firms, also aim at strengthening the regional economic structure. Structural changes are achieved by strengthening specific sectors such as the ones indicated above: automotive, environmental etc., but also by improving the links with and quality of the support infrastructure. Hence:

The novel contribution of cluster approaches is that they facilitate better interaction between firms (and regional support agencies) while at the same time (re)shaping the regional economic structure.

Using academic terms, one could also say a bridge is built between the micro-meso levels of business development, and the meso-macro level of regional development.

2  Clusters as target and method

Both at the business and regional level, cluster initiatives serve two purposes: (1) shaping groups of networked businesses in targeted sectors (2) improving business capabilities by offering tailored support and encouraging inter-firm learning. Most initiatives show a mix between these two objectives. This invokes a double role of the ‘cluster’ concept:

In helping firms and regions, the cluster concept plays a double role: first, as target (shaping related business activities in certain sectors), and second as method (to facilitate inter-firm learning and tailoring of support)

In the CORE regions, the Aragonese wine initiative represented the clearest case of a cluster-as-target approach, while the German initiatives
tended towards the cluster-as-method approach. The activities of one support organisation on Tyneside, the Real Service Centre (RSC) show a strong mixing of the two objectives.

3 Cluster selection

Cluster-as-targets pose the dilemma of how targets are chosen and set, i.e. how business sectors (or related activities) are selected. Two principal routes are available here. One is the ‘top-down’ route, in which a cluster priority list is drawn on the basis of a cluster analysis. The other is ‘bottom-up’, in which the initiative to develop a cluster strategy comes from actors within sectors themselves. Both routes have disadvantages. The ‘top-down’ approaches face the problem of why certain activities were included (especially if some of these turn out to be less successful), while other were excluded. It appears to be difficult, in particular, to resist the temptation to include ‘fashionable clusters (new media, telecom, culture), even if any genuine background in these activities is lacking. Even if this temptation can be resisted, however, the process of prioritising will inevitably be based on certain arbitrary choices. ‘Bottom-up’ approaches, on the other hand, generally benefit from already existing inclinations to undertake joint action and to co-operate. For the same reasons, however such approaches fail to reach sectors of the economy where collaborative attitudes are lacking, even if they have clustering potential. The best approach may well be one that strikes a balance:

*Cluster targeting, because of the inclusion-exclusion dilemma, presents one of the most controversial aspects of the cluster approach. In general, a mixture of top-down (pre-selection) and bottom-up (self-selection) may well provide the best approach to this problem.*

In the CORE initiatives, cluster selection occurred largely on arbitrary grounds or in a bottom-up way. The RSC manifested a good mix between ‘top-down’ pre-selection of clusters for new projects and bottom-up cases, where the initiative was taken by participating business actors. Examples of comprehensive ‘top-down’ approaches can be found outside CORE regions, for instance in the Basque Country and Scotland.

4 Self-sustaining clusters

Over the last decade, clusters-as-target have had a strong appeal to regional policy makers and others with interest in regional development. This appeal stems from the double promise delivered by the cluster approach (see 1): helping local firms while at the same time (re)shaping the regional economic structure. In time, however, the focus on clusters as an outcome may also pose a problem. What should be done if a cluster does not really materialise, if the interaction between firms remains limited and if no collective action and identity are achieved? Given that cluster support generally involves close relationships between the support sector and firms, there is an inclination to continue support in the hope that the future will bring improvements. In doing so, however, cluster initiatives may run the risk of turning targeted business into the ‘babies’ of support
agencies. The only kind of dependency that should be accepted, or even appreciated, is when the initiative to apply for additional funding come from the participating business themselves.

The result of cluster facilitating should be to avoid situations of continuing dependency on aid, and to work towards clusters that are largely independent, in organisational as well as financial terms.

Tyneside demonstrated cases of both self-sustaining clusters - in the marine and automotive sectors - and dependent clusters (RSC), NRW shows an intriguing contrast of a failed and successful, i.e. continuing, cluster.

5 Instilling collaborative attitudes

Clusters-as-method refer to the use of the cluster concept not so much to shape clusters, but as a way to improve business capabilities by encouraging inter-firm learning and by tailoring support to groups of related firms. The aim of this approach is not so much to facilitate clustering in certain sectors, but rather the aim is to instil collaborative attitudes among firms, to help them to learn more from each other and from the regional support infrastructure. Through demonstration effects, it is generally hoped that such attitudes spread to other firms, and to other sectors. This dimension of clustering should be seen as a response to the lack of focus, depth and continuity, as well fragmentation and internal rivalries, that have characterised a large part of the regional business support services. Evidence shows that because of these factors firms have become increasingly wary of using support services.

The structural outcome of the clusters-as-method dimension is not so much a reshaping of the regional sector profile, but changing business attitudes and an improved support sector performance.

The NRW environmental sector manifested a shift in focus from ‘cluster-as-target’ to ‘cluster-as-method’ because of the firms were more interested in inter-firm learning than in ‘cluster-building’. A similar shift can be observed in the case of the RSC, which also shows how clustering has contributed to improved co-ordination of business support.

6 Regional and business interests

Like all forms of business support, regional cluster approaches should not simply respond to business needs (in the sense of self-declared wants). Rather, the specific objectives of a cluster initiative should be based on an assessment of how business performance can be modified in order to serve regional interests. Regional interests may be based on the wish to keep firms in the area, to build links between large firms and SMEs, to improve regional assets (technological capacities, labour market, collective intelligence on external technological and market development). Such regional assets have been defined as ‘club goods’. Obviously, business actors will only co-operate with regional strategies if they feel it is also in their (individual or collective) business interest. For this reason, the
initiatives examined in this report have been assessed from a business and a regional development perspective, and from the intersection between the two. Hence:

*Cluster initiatives can only be successful if they manage to align business and regional interests. One result of this alignment is the creation of ‘club goods’, productive assets anchored into regions underpinning the competitiveness of specific regional business groups.*

A recurrent regional interest shown by the CORE cases was the inclination to prevent local firms, or skilled staff, from relocating. The Aragonese wine case, and the NRW automotive cases manifested tensions between regional and business interests. Examples of ‘club goods’ are the institutionalisation of wine districts in Aragón, the sector associations on Tyneside, and the collective intelligence on quality certification in NRW.

**Underpinning business competitiveness**

Finally, when assessing regional and business needs, careful attention should be paid to which factors underpin business competitiveness. This means that business development should be perceived from an integral perspective, taking account of management issues, technology, training, quality, finance, marketing etc. This should be followed by a strategic assessment of how a group of regional firms may (re)position itself in the global market, and an assessment of which (business and regional) capabilities are most in need of improvement. A problem is that policymakers as well as support agents tend to overplay the role of (technological) innovation. While this may be important in the long term, the first thing many SMEs need is to catch up with competitors in terms of management, quality control, environmental accreditation, etc. The regional support infrastructure should be geared to providing tailored support in these areas.

*Cluster approaches should take a broad view of business development, based on careful assessment of the competitive positioning of groups of regional firms in the global economy. This may result, at least initially, in an emphasis on modernisation (upgrading) rather than on innovation (creating unique technological advantages).*

In effect, nearly all cases examined here endorse this point.

**Good practices**

A summary of the good practice recommendations is included in Table 2.
### Table 2 Good practice in clustering

<table>
<thead>
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<tr>
<td>• facilitate clusters</td>
<td>• build clusters</td>
</tr>
<tr>
<td>• use clusters as demonstration models</td>
<td>• see clusters as ‘static’ end goals</td>
</tr>
<tr>
<td>• encourage firms to submit new funding applications</td>
<td>• be committed to the survival of firms or clusters</td>
</tr>
<tr>
<td>• strive for broadening of the clusters (e.g. through association building)</td>
<td>• fund single clusters in the long term</td>
</tr>
<tr>
<td>• assess carefully the (potential) position of regional businesses in the global market</td>
<td>• provide unfocused support/intelligence</td>
</tr>
<tr>
<td>• engage with large firms, support agencies in/outside the region, etc.</td>
<td>• focus on innovation when the key issue is modernisation</td>
</tr>
<tr>
<td></td>
<td>• compete with other business support agencies</td>
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</tbody>
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Researcher profile

Born in 1963 in Amsterdam, Arnoud Lagendijk attended the Municipal Gymnasium in Dordrecht, near Rotterdam. He studied regional geography at the University of Utrecht, where he wrote his Master's Thesis on regional development in Spain. From 1989 to 1994, he was a research assistant at the Tinbergen Institute in Rotterdam where he received his doctoral degree in December 1993, and a lecturer in economic geography at the Erasmus University in Rotterdam. In 1994, he started working in the UK, first as a visiting research fellow at the University of Reading, and later as a Research Associate at CURDS, Newcastle, where he was involved in work for the EU and OECD. He has developed an expertise in the area of innovative approaches in regional economic development, focusing on the role of large firms as well as small and medium sized firms. Presently (autumn 1999) he is working at the University of Nijmegen in the East of The Netherlands, where he continues his work on policy learning across Europe.
Chapter One. Introduction

1.1. ADAPT-CORE European research

How can support to SMEs be improved in such a way that it contributes to regional employment and wealth? Over the last three years, five regions in Europe have collaborated in a European programme developing new strategies and approaches to assist SME development. The five regions are Tyneside, Hessen, Northrhine-Westphalia, Aragón and Bedfordshire. The programme, co-operation of Regions in Europe (CORE) brought a unique combination of local support and international exchange, and of practical support projects and research activities. The international dimension has been managed by an international network of CORE participants, called COMECON. The cluster project has benefited particularly from the COMECON activities.

This document reports one of the research strands, European research on clustering. While the research had its own specific focus - that of clustering - it was carried out in close interaction with the other CORE strands. The CORE cluster project started two years ago and was completed at the end of 1998. The research was carried out by the Centre for Urban and Regional Development Studies (CURDS) in Newcastle upon Tyne. Dr. Arnoud Lagendijk has been the core researcher, who joined the transnational exchanges to compare business cluster developments in Germany, Spain and the UK. Not only CORE regions were targeted (Tyneside, Hessen, Northrhine-Westphalia, Aragón) but also other regions in which the ‘cluster’ approach has featured (Scotland, Wales, Basque Country, Baden-Württemberg). The project was supervised by Dr David Charles at CURDS and the CORE team.

1.2. What are clusters?

This project has explored different cluster initiatives that are used within in the context of regional development. Two general categories can be distinguished, regional clusters and business clusters:

Regional clusters are defined at the level of regional economic sectors, which derive their competitiveness from various form of interaction, the use of common assets, and/or the provision of common services

Business clusters are groups of neighbouring firms with different, but related activities, which through joining forces create processes of mutual learning and synergy.

In practice, the two varieties may come close together, especially in the case of small regions.
Why do cluster approaches help? Small firms often suffer from isolation, because entrepreneurs do not have the time for regular meetings with peers in their own environment. They may thus miss out on important opportunities for exchanging experiences and for undertaking joint development of products and services with greater market potential. Not only is there a problem of time and effort, small firms also tend to see nearby firms in similar sectors as competitors rather than potential partners for collaboration. The cluster approach aims at overcoming the practical and cultural obstacles to collaboration. Clustering may also serve to make firms more oriented to the national and global markets. By overcoming 'petty rivalries' in the firms' own backyard, forces can be joined to be competitive (inter)nationally.

The innovative aspect of recent cluster initiatives is that it frames support to local business within a wider local and regional economic context. Business development through clustering thus becomes part of a strategy of regional economic development. This framing has two dimensions. First, it involves the forging of links with other regional actors (specialised support and technology centres, colleges and universities, Chambers of Commerce, etc.). Second, it supports a vision of regional specialisation. Such a vision may be depicted in ‘cluster maps’ which indicate in which groups of related economic activities regions have their competitive edge.

Based on this first introduction of clusters an important conclusion can be drawn. Cluster dynamics contribute to the competitiveness of the economic actors that are part of the cluster. In doing so, cluster dynamics also add to regional economic performance. The impact of clusters should thus be perceived at these two levels. However, the link between business development and regional development is not as straightforward as is sometimes presented. Indeed, it is one of the main undertakings of this report to show under what conditions regions benefit most from cluster-based business development. A basic distinction will be made between the business development perspective and the regional development perspective. This distinction will serve to structure both the methodology and case studies, which will be presented later in the report.

1.3. CORE research questions

Three of the five CORE regions do not belong to Europe’s core regions. Aragón is an intermediate region which benefits from its geographical position between Madrid, Barcelona and the Basque Country but which lacks a strong economic profile. Northrhine-Westphalia, more specifically the Ruhr, and NE England can both be characterised as ‘old industrial regions’. So far, these regions have not been able to nurture new economic activities at a sufficient level to overcome a long period of industrial decline. Hessen, more specifically Frankfurt and Bedfordshire, on the other hand, are part of Europe’s core. However, this does not mean that all sectors are thriving. On the contrary, particularly SMEs in more mature economic sectors, notably in manufacturing, are often in need of modernisation and overcoming problems of isolation. Therefore, one case
out of these German regions has been added. This concerns the automotive sector in the Frankfurt area, because of its relationship to the concept of regional clusters.

As expressed in the very first sentence of the introduction, the aim of this project is to expand and sharpen our knowledge about how SMEs should be assisted so that they add to regional development. The central question of the study is derived by narrowing this broad question down to cluster approaches:

*How can cluster-oriented forms of business support improve the way SMEs contribute to regional employment and wealth?*

SMEs are defined here as firms with up to 100 employees. This question will be answered by addressing the following issues:

First, *how has the cluster concept been conceived and developed? What are the main dimensions of regional-economic development underpinning the concept of clustering as an analytical tool? What has been the contribution of policy learning to adopting the cluster concept in policy strategies?*

Second, *when exploring cluster-based policy strategies, what are the main methodological questions? In particular, how should the various stages of the policy cycle (conceptualisation, planning, implementation, evaluation) be approached? What are the main issues for business development? What are the main issues for regional development?*

Third, *what can we learn from the CORE regions about the use of cluster concept in regional policy making? In what kind of economic and policy context have cluster-oriented policies been conceived, planned and implemented? What have been the benefits from a business perspective? What have been the benefits from a regional perspective?*

To answer these questions, both desk research and empirical research has taken place to explore the cluster concept. For the empirical part, nearly 80 interviews have been held with representatives of authorities, support agencies and businesses in the ADAPT-CORE regions and with related organisations elsewhere. Three lines of inquiry were followed: (1) the description of various cluster initiatives (targeting the chemical, automotive and environmental sectors in Germany, the wine sector in Spain, and the automotive, maritime, and business services sectors in the UK), (2) the examination of the business perspective on clustering and (3) the position of clustering in regional economic development.

1.4. **How is the report structured?**

The report will follow the research questions closely. Chapter Two and Chapter Three are dedicated to the conceptual discussion, in a seven-steps presentation, addressing the first question. Chapter Two focuses on the more general aspects, while Chapter Three focuses on the dimensions which have particularly contributed to the application of the cluster concept at the regional level. In response to the second question, Chapter
Four presents the methodological framework. This results in the research *Pro Forma*, a detailed issue list which will serve for the case studies. Chapter five introduces the CORE regions, with emphasis on the economic and policy context for cluster-oriented policies. Chapter Six and Seven present the cases: first the regional cluster cases, followed by the business clusters cases. The conclusion follows in Chapter Eight.

1.5. **Researcher profile**

Born in 1963 in Amsterdam, Arnoud Lagendijk attended the Municipal Gymnasium in Dordrecht, near Rotterdam. He studied regional geography at the University of Utrecht, where he wrote his Master's Thesis on regional development in Spain. From 1989 to 1994, he was a research assistant at the Tinbergen Institute in Rotterdam where he received his doctoral degree in December 1993, and a lecturer in economic geography at the Erasmus University in Rotterdam. In 1994, he started working in the UK, first as a visiting research fellow at the University of Reading, and later as a Research Associate at CURDS, Newcastle, where he was involved in work for the EU and OECD. He has developed an expertise in the area of innovative approaches in regional economic development, focusing on the role of large firms as well as small and medium sized firms. Last August he took up a research post at the University of Nijmegen in the East of The Netherlands, where he will continue his work on policy learning across Europe.
Table 3 Interview list and schedule.

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<tr>
<th>Tit. First name</th>
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<td>Rasper</td>
<td>Agiplan - Mühlheim</td>
<td>Mühlheim</td>
<td>FRG Jan. 97</td>
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<td>Prof. Ekkehard</td>
<td>Friel</td>
<td>Gesamthochschule Kassel</td>
<td>Kassel</td>
<td>FRG Mar. 97</td>
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<td>Dr Peter</td>
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<td>Gesamthochschule Kassel</td>
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<td>FRG May 98</td>
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<td>Dr Gerhard</td>
<td>Bauer</td>
<td>Hessische Technologiestiftung GmbH</td>
<td>Wiesbaden</td>
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<td>Dr Jürgen</td>
<td>Zabel</td>
<td>Hessische Technologiestiftung GmbH</td>
<td>Wiesbaden</td>
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<tr>
<td>Mr Hans-Peter</td>
<td>Laux</td>
<td>Industrie- und Handelskammer</td>
<td>Frankfurt/Main</td>
<td>FRG May 98</td>
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<tr>
<td>Dr Dieter</td>
<td>Rehfeld</td>
<td>Institut Arbeit and Technik</td>
<td>Gelsenkirchen</td>
<td>FRG Jan. &amp; Sept. 97</td>
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<td>Ms Doris</td>
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<td>Institut Arbeit und Technik</td>
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<td>Dr Ralf</td>
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<td>Ms Vivien</td>
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<td>Mr Roland</td>
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<td>Mr Bernard</td>
<td>Wirth</td>
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<td>Eschborn</td>
<td>FRG March 97</td>
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<td>Ms Doris</td>
<td>Krüger-Röth</td>
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<td>FRG March 97</td>
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<tr>
<td>Mr Sebastian</td>
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<td>Mr Martin</td>
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<td>Mr Paul Robson</td>
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<td>Mr Keith Burge</td>
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<tr>
<td>Mr Hayasaki</td>
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<td>Mr Dave Ward</td>
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<tr>
<td>Mr Angus Garrett</td>
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<tr>
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<tr>
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Information derived from interviews, as far as not explained in the text, is indicated with "(iv)"
Chapter Two. The cluster concept in seven steps: from the analytical stage to policy-making

The evolution of clusters in quotes (emphasis added by the author)

1. (conception) “A consequence of the system of [diamond] determinants is that a nation’s competitive industries are not spread evenly through the economy but are connected in what I term cluster consisting of industries related by links of various kinds” (Porter, 1990 p.131-132)

2. (spatial communality) “The rationale for using the relatively broad term, regional cluster, is that all of the terms alluded to describe geographic agglomerations of firms in the same or related industries and as such are used to describe aspects of the same broad phenomenon” (Enright, 1994a p.2)

3. (innovation) “In many cases and increasingly in the future, industrial innovation requires the intelligent conception of different forms of knowledge, technology and skills. A cluster approach provides a relatively new basis for the development of effective innovation strategies” (Jacobs, 1997 p.22)

4. (institutions) “Interestingly, there are pronounced signs (...) that associative thinking, partnership building and encouragement of policy networks to facilitate the emergence of new industrial clusters are developing” (Cooke, 1995a p.12).

5. (SMEs) “The requirements of small and medium-sized business seldom are simple or one-dimensional. Needs for new technology, for example, are linked to needs for capital, training and reorganisation and markets (...). Providing specific services organised by specific clusters is another service option. Such services can be provided by agency staff drawn from, and therefore able to understand the industries served, or can allow current staff the opportunity to learn a particular industry in-depth.” (Rosenfeld, 1995, p.37)

6. (typology) “In this way the different possible cluster dimensions can be seen as a menu, out of which these business strategists and public policy-makers can choose, according to the specific situation they are confronted with.” (Jacobs, 1997, p.24)

7. (debate) “(...) criteria for clusters have proven exceedingly difficult to pin down, and there are as many definitions as there are types of organisations using the term” (Rosenfeld, 1997 p.8)

“It [the cluster concept] stands at the cross-roads between regional action, industrial and labour market policy, education and research policy, urbanism and town planning, and perhaps also opinion forming and political leadership - no mans land astride the conventional organisation of administration and public life” (1997, p. 16)
What are ‘clusters’? Since the early 1990s, this question has intrigued and puzzled many academics and policy-makers. The term was first used by Porter in his seminal volume ‘The competitive advantage of nations’. Then it became part of a busy, fascinating tour through which clusters became associated with ‘competitiveness’, ‘innovation’, ‘restructuring’, ‘spatial agglomeration’, ‘supply chains’, ‘small firm networks’, ‘industrial districts’, the role of industrial associations, and more. Academics in their research, policy makers in addressing structural economic problems, business support agencies in devising more tailored services, consultancies in developing new services, businesses confronted with questions of alliances and supply chains, readers and writers of the economic columns in their local newspaper: a highly diverse group of people and organisations has emerged trying to come to terms with, and use, the concept of clusters, but which, in doing so, is also producing new definitions, new approaches and new applications. Clusters, so writes an expert on the issue, “have the discrete charm of hard-to-define objects of desire.” (Steiner, 1997, p.17). The reader looking for a common definition and a ‘magic formula’ for regional development will be disappointed. The only magic that will presented here is the recounting of the ‘story of clusters’ in seven steps, each reflecting a major source of inspiration and desire for the cluster concept. Hopefully this will create a better understanding of how clusters have been applied in practice, as will be discussed in more detail later in this study.

2.1. Step one: the conception of clusters

“A consequence of the system of [diamond] determinants is that a nation’s competitive industries are not spread evenly through the economy but are connected in what I term cluster consisting of industries related by links of various kinds” (Porter, 1990 p.131-132)

The steps in this concise history of the cluster concept are accompanied by seven quotes on clusters, taken from what may be regarded as - within their own context - influential writers on the issue. The story of clusters can be seen as a process of proliferation of ideas and understandings, of adoptions in a variety of fields of research and policy making, followed by attempted reconciliation, categorisation and re-definition.

Quote One presents what may be seen as the conception of the cluster concept. Porter did not define the term, but used it as an intermediary between his ideas on the pillars of economic success and the performance of a country in the global economy - what is summarised under the term ‘competitiveness’. Porter braced the concept by identifying a list of sixteen named clusters that he saw as crucial for economic development at present (see Porter, 1990). The list formed the basis for the imaginative cluster maps that lied at the heart of his empirical studies. In 1990, Porter did not attach so much value to ‘clusters’ as reflected in follow-up work by others, as well as his own recent work. Essentially, Porter attributed competitiveness to the interaction of a complex set of factors, called the
‘diamond’ factors. The diamond consisted of ‘factor conditions’, ‘demand conditions’, ‘related and supporting industries’ and ‘firm strategy, structure and rivalry’. He also included two contextual factors that work indirectly through the main determinants: the role of chance and, finally and with emphasis on indirectly, the role of government. These factors, in a dynamic manner, impinged upon the competitive position of businesses in a country.

“competitive advantage in advanced industries is increasingly determined by differential knowledge, skills and rates of innovation which are embodied in skilled people and organisational routines”

(Porter, 1990, p.158)

Now, the observable result of this dynamic would be that - in an essentially unpredictable way - patterns of clusters would emerge, in which linkages between related businesses (and organisations) would support competitive advantage.

Porter’s work has been widely acclaimed for the way he brought together ideas from, in particular, strategic management, industrial organisation, innovation theory, and institutional economics. While his earlier work focused on business strategies and value chains, with his work on ‘The Competitive Advantage of nations’ he adopted a broader view that included industrial and national levels. Commentators on Porter’s work have shown how Porter has also changed his theoretical position from one largely based on a strategic re-interpretation of industrial organisation to one following Schumpeterian ideas on innovation (Foss, 1996). That is, he shifted the focus of analysis from the positioning of firms in market structures to the capabilities of firms to develop unique sources of competitive advantage, although some of the market positioning aspects were retained. This shift reflects in many respects a fundamental change. The old model was characterised by a neat separation of firms and environment, by the transparent nature of vital information, and by profitability levels secured by the evasion of direct competition. The new model, in contrast, emphasised complex interaction between firms and environment, a vital role for tacit knowledge, and competition as the stick forcing firms to innovate and secure their market position (Table 4). The most radical change can be found in policy recommendations, which in the new model endorsed competition, innovation and a preference for demanding customers and strong suppliers.
### Table 4 Interpretation of Porter’s shifting position in the 1980s

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<th>Porter early 1980s</th>
<th>Porter 1990</th>
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<tr>
<td>Main theoretical angle</td>
<td>Industrial organisation (structure-conduct-performance, equilibrium)</td>
<td>Schumpeter, Austrian School (innovation, disequilibrium)</td>
</tr>
<tr>
<td>Nature of success factors</td>
<td>Observable (separation firm-environment)</td>
<td>Tacit knowledge (firms and environmental factors interlocked)</td>
</tr>
<tr>
<td>Interpretation of innovation</td>
<td>narrow, technological affecting the whole business value chain, largely external to the analysis</td>
<td>Broadened to ‘better ways of doing things’; key to economic success</td>
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<tr>
<td>Position of business strategies</td>
<td>Fundamental - capable of inducing short-term change</td>
<td>More emphasis on core competencies and path-dependency</td>
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<tr>
<td>Source of competitive advantage</td>
<td>Constraining competitive pressures through positioning strategies</td>
<td>Outcompeting rivals by constant upgrading and innovation</td>
</tr>
<tr>
<td>Unit of analysis</td>
<td>Business (linked to products)</td>
<td>Impact of national factors on the innovative potential of firms (resulting in cluster level?)</td>
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<td>Recommendations (business level)</td>
<td>Avoid competition to prevent profit erosion; target average consumers and control suppliers’ margins</td>
<td>Seek competition as a key to learning; seek demanding consumers and capable suppliers</td>
</tr>
<tr>
<td>Policy recommendation</td>
<td>Check negative forms of competition that threaten profitability levels</td>
<td>Increase competition, support innovation and supplier-buyer interaction</td>
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</table>

Source: based on De Man, 1994.

Whilst ‘the competitive advantage of nations’ has received an enormous response, from academics, policy-makers, consultants and others, Porter’s shift in position and ideas about competitiveness have incurred considerable criticism from academics. Because his shift was in some ways partial, his approach has been accused of being too eclectic and based on too much ‘ad hoc’ reasoning and evidence (Foss, 1996). Not surprisingly, since his approach had absorbed ideas from many disciplines, specialists accused him of misrepresenting and twisting complex ideas. Examples are the treatment of technological development, the social embedding of production, the poor treatment of institutions at the meso (industry) level, the ignorance of the role of power and the complexities of inter-firm relationships (Marceau, 1994; McKelvey, 1991; Sally, 1994; Beije & Nuys, 1995). The last point may well reflect one of the most serious criticisms (Foss, 1996). Despite the articulation of the ‘value chain, the underlying view of the firm remained close to a functional-technological one, which did not chime with the more contractual and network-oriented views of the firm which feature in recent literature on innovation. Porter is thus able to ‘hide’ the co-operation factor within processes of innovation and competitiveness (Cooke, 1995a).

On the other hand, Porter’s overall dynamic framework of the diamond was only intended as an explanatory framework, not as a system of causal relationships. It leaves many questions open about the relationships between the diamonds, clusters and competitiveness. It thus became more
difficult to extract research models as well as policy recommendations. As one reviewer of the 1990 book commented:

“Cause and effect are blurred in this real world, the direction of causality shifts over time, and as it does, industry-specific competitive advantages evolves” (Jelinek, 1992, p. 508 quoted in de De Man, 1994, p. 46).

With respect to the concept of clusters, the debate tried to come to terms with the question of the level of analysis. The combination of the word national title of the 1990 book, and the line of reasoning from diamond to business capabilities, with a strong role for cluster level was a source of confusion. De Man’s solution is to emphasise the interaction between the national and business level. Other authors argue that, in the end, clusters present the basic unit of analysis (Auerbach & Skott, 1995). Perhaps the best viewpoint is that no definite answer to this question can be drawn from Porter’s work:

“The problem with Porter is that he jumps very easily from the macro (national) to the meso (industry) and micro (firm) level and the other way around, when it suits him” (Beije & Nuys, 1995 p.21)

However, the issue of the levels of analysis amounts to more than just academic irritation and squabble, especially when geography comes into the picture. How exactly do clusters fit in the national diamond, and how do firms fit into clusters and the diamond? Porter’s answer is simple. The national (and in certain cases, the regional) level is that in which the diamond evolves and clusters emerge, and which is the home of the businesses which shape competitiveness. This weaving of national factors, cluster formation and business development has been subject of fierce debate. According to Dunning (1992) and O’Donell (1995), Porter draws the wrong conclusion here. Both authors argue that multinational firms can play an important, and for peripheral countries often indispensable role in improving diamond factors, although they can also play a destructive role. They thus oppose the notion of Porter and others (Malmberg & Maskell, 1997) that multinationals, when it comes down to innovation, act largely in the same way as domestic firms. Through the role of inward investors, clusters can develop around investment ‘hubs’, in twin development with clusters in the inward investors’ home country. In addition, there are many other ways in which clusters can be related to other areas, for instance through the acquisition of knowledge, alliances between firms, and co-operation between research centres. Indeed, some authors have argued that it is this capacity to create high quality external links and information flows that underpins competitiveness (Gray et al., 1996; Narula, 1993). While such statements are very difficult to verify in a more general way, what is clear is that Porter’s presentation of how the different levels of analysis relate seems to be too simplistic.

The conception of clusters, and the first response to it, as briefly sketched, may already give indication of why the concept embarked on its adventurous route. On the one hand, Porter’s approach had immediate great appeal. After a decade or more of talking about and analysing the
role of innovation, a framework was presented that, although with many question marks, offered the perspective of a hands-on approach to economic development. As will be shown below, the cluster concept played not only in the hands of researchers, but also of policy-makers and support organisations, and forged new links and debates between them. On the other hand, the open ends and the need to respond to the weaker aspects of the approach made the cluster concept relatively malleable. It could be applied at different spatial levels, and by responding to the criticism about the levels of analysis, even be linked to the role of foreign firms. The formulation of the concept also allowed a more spatial notion of clusters to be developed, linking it for instance to the literature on industrial districts. It could be applied for the devising new approaches to innovation and industrial policy, especially by linking it stronger to the literature on the role of institutions and networking. Both the more spatial notion of clusters and the association with networking paved the way for a stronger emphasis on small and medium-sized firms. And through the latter, the concept inspired new approaches to business support. The following steps will provide more details of how the concept has evolved.

2.2. Step two: what spatial clusters have in common

"The rationale for using the relatively broad term, regional cluster, is that all of the terms alluded to describe geographic agglomerations of firms in the same or related industries and as such are used to describe aspects of the same broad phenomenon" (Enright, 1994a p.2)

The previous section has illustrated how the concept of clusters has evolved and, in doing so, produced a myriad of definitions and approaches. A pressing issue that emerges is thus: what do clusters have in common? This section will set out what can be perceived as the main common points of analytical cluster approaches. This exercise does not present an attempt to 'box in' the cluster concept by proposing a universal definition. Instead of looking for a definition, the approach followed here is to identify a set of common ideas or dimensions which, in the author's view, underpin most of the analytical cluster approaches. The core objective is to create some common ground for further discussion of the concept as well as give an indication of why, inspired by its analytical value, so many policy approaches have adopted a cluster perspective.

So, what characterises cluster approaches? The central idea lying behind nearly all cluster thinking is that a group of related economic activities in a certain area has increased its performance in the wider market place. Hence, on what can be seen as the 'output' or 'identity' side of clusters, three dimensions can be distinguished:

1. competitiveness, seen in a dynamic and global context, i.e. closely associated with innovation and the adoption of 'best practice'

2. economic specialisation, in a certain range of related activities (the automotive cluster, cultural cluster, cut flower clusters etc.)
3. **spatial identity**, relevant both to agents and organisations inside the clusters as to the outside world (the Dutch cut flower cluster, the Basque machine tool cluster, the London financial services cluster)

On the ‘inside’ of clusters, i.e. what cluster are made of, four common elements can be distinguished:

1. emphasis on interaction between businesses
2. the variety of resources and competencies which those organisations/busesinesses control
3. the interaction of businesses within a wider system of supporting institutions
4. spatial concentration

Combining these elements, it is possible to come to a kind of framework definition of ‘clusters’ (Figure 1). This may read as follows:

“Clusters consist of a group of businesses with different but related competencies co-located in a certain area, which through particular forms of interaction and ‘institution building’ among themselves and (potentially) with other organisations in the area raise their competitiveness, specialisation and identity in the global economy.”

This definition is deliberately vague on how the different dimensions - the kind of business competencies, interaction, ‘institution building’, and organisations it refers to - and even the concept of ‘competitiveness’ - should be understood. Both analytical and policy users combine these dimensions according to their own insights and interests to create a specific interpretation of clusters. Starting with the ‘inside’ dimension, the following views may be expounded:

(1) **Interaction between businesses**: Interaction between firms within the boundaries of a certain territory lies at the heart of the cluster concept; this distinguishes the term from a more global concept such as ‘sector’:

“We use the term ‘cluster’ generally when describing locational and transactional relationships between firms; ‘sector’ when discussing
industry-targeted strategies and policies to enhance competitiveness”
(Rosenfeld, 1995, p.13)

But what kinds of transactions are important? In the first instance, clustering was seen in the context of the physical movement of goods and the exchange of services between co-located firms. Especially in manufacturing, clusters have been interpreted as hub-and-spoke systems of supply chains. Clusters have been associated, in particular, with the increased significance of Just-in-Time delivery in the automotive industry. The evidence on the link between new logistical systems and spatial clustering is however far from strong (Sadler, 1994). Just-in-Time, has increasingly been shown to be restricted to the bulkier components with often low value added. The interest has thus shifted from the physical flow dimension to aspects of supply chain management and learning between firms, that is, from material to more immaterial linkages.

More recent contributions to cluster analysis and policy formulation tend to stress ‘collaboration’ and the creation of trust as key components in raising competitiveness. “It is this hidden dimension of co-operation that helps give cluster their competitive advantage Cooke, 1995a, p. 10). Rather than from large-scale manufacturing, these insights are derived from regional success stories such as found in the central (‘Third’) part of Italy (industrial districts) and studies on networking for instance in Denmark (Ploughmann, 1991). Overcoming ‘petty’ rivalries and finding ways to pursue common interest and share resources are generally presented as ways to become more innovative and competitive (Best, 1990). A core idea here is that firms compete as a group. However, not all authors cherish the role of collaborative links between firms. Porter’s original idea was highly critical of the idea of networking, particularly as part of policy support. More recently, several authors have developed a more articulated view, in which there is a balance between competition and collaboration (Boekholt et al., 1993; Enright, 1994a). While firms may co-operate in areas such as innovation, training, the hiring of workers and lobbying, this should not result in collusive action in the marketplace.

Different directions of inter-firm relationships can be distinguished depending on where firms operate in wider production systems. Horizontal links refer to links between firms in similar positions that interact on the basis of complementary assets or the opportunity to learn from ‘peer’ firms. Vertical links may emerge when firms occupy different positions in a supply chain and opportunities exist to develop supplier relations and initiatives of inter-firm learning along the supply chain. An issue related to the nature of linkages is that of overall profile of the businesses involved. Cluster policies emphasising horizontal relationships are often only targeted on SMEs. In other projects, large firms are also involved. Large firms can play various mentoring or tutoring roles (Morgan, 1996; Jacobs, 1997). One specific role emerges when the large firm is a (potential) customer of the SMEs, in a supply chain context. The aim of the mentoring action is to communicate to (potential) suppliers how to develop their position in the supply chain. This may cover a large part of internal business processes: quality, delivery, customisation, use of EDI,
service. In addition, more specific knowledge about the procurement and contracting practices of potential customers can be disclosed. This may help SMEs to develop a more tailored marketing strategy. A supply chain context is however only one of the examples in which larger firms can play a role. They can also act as mentors, assisting SMEs in improving specific business processes.

(2) The variety of resources and competencies that businesses control: In recent literature on business performance, competitiveness has increasingly been associated with the creation and mobilisation of resources and the development of firm-specific competencies, rather than with issues of business size and market positioning. In addition, this resource-based interpretation of business success has shifted from ‘basic’ technological and organisational capabilities to higher level competencies such as the management of processes of learning and continuous improvement.

There are two dimensions to resource development. On the one hand, as emphasised throughout Porter’s work, competitive advantages are derived from specific resources, that is, assets that are modified or created specifically by and for certain users. Increasingly, such resources underpin the organisational, technological and management skills of businesses. Besides Porter, the notion of specific resources has received much weight through the work of Williamson (1985).

On the other hand, authors have emphasised the access to resources, the specific way they are applied, and combined with other resources (Powell & Smith-Doerr, 1994; Storper & Scott, 1995; Håkansson & Johanson, 1993). The idea of variation in the way resources are applied resonates Penrose’s (1959) observation that it is not so much the resources as such that count, but the services they render to a particular firm. Both the creation and mobilisation of resources are thus increasingly seen in a relational context. Firms need to interact with other firms to be able to upgrade their internal resources; they also need this interaction to be able to integrate a diverse range of technologies and skills controlled by other firms. Only by forming such alliances, can firms secure a position in an increasingly demanding market place and in a world dominated by increasingly complex technology. It is this need to link and develop resources between businesses which has raised the significance of supply chains, clusters and other ‘system’ concepts (Tushman & Rosenkopf, 1992).

Moreover, linking different resources, technologies, and organisations requires the building of complex interfaces, which places strong demands on the management and networking capabilities of the businesses involved. It is this capacity that increasingly forms the crux of business performance. Accordingly, supply chains and clusters should be perceived more as groups of firms which exchange intermediate goods and services to each other. Clusters can be perceived as complex organisational environments, and it is a major challenge to firms, especially for SMEs, to acquire the necessary skills to move around in such environments (Keeble, 1997). Supply chains, in particular, have been presented as a highly suitable
environment for learning, a view strongly supported by Brian Morgan on the basis of experiences of the Welsh Development Agency:

> The key point to establish is that the integrated supply chain is first and foremost an awesomely effective system of interactive learning; indeed it has proven to be one of the most important mechanisms for generating and disseminating knowledge and problem solving capacities way beyond the confines of a single firm” (Interview)

The emphasis on learning in an interactive context is increasingly interpreted from an institutional perspective. Not only are businesses and their interactions seen as complex forms of social organisation, the structures in which they operate are also marked by certain rules and routines. In other words, through processes of ‘collective learning’ competencies emerge at the level of the ‘system’, additional to firm-specific competencies (Lawson, 1997b). Such a view is also expressed in Boekholt’s definition of clusters:

“(…) clusters are groups of firms, R&D institutions and other intermediary actors, interacting through interdependent linkages and exchange of knowledge, when innovating and creating added value. Cluster policies are all those initiatives that aim to support this type of interactive learning between a number of actors, in particular those from industry. This could be a group of firms, or a combination of firms and organisations that help to increase innovation capabilities such as R&D institutions. In contrast to traditional R&D policies where bilateral relations were supported, a crucial element of cluster policies is that it encourages a number of firms to jointly work towards improving their competitiveness.”

Definition used in a survey as part of the OECD-NIS (National Innovation Systems Project)

This quote also points at another aspect of the resource dimension of clusters. Through the clustering process, the skills and resources underpinning economic success may become part of the cluster, in such a way that they may develop partly independently of the businesses that originally shaped and embodied them. Collective learning to a kind of collective resource building. The idea of cluster-specific resources being developed through the interaction of firms from different industrial backgrounds is also espoused by Kantor’s definition of clusters: “clusters are concrete manifestations of more generic skills that cut across industries but outlast them” (quoted in Rosenfeld, 1997, p.18).

(3) Interaction of businesses within a wider system of supporting institutions and a tailored infrastructure: Boekholt’s quote not only highlights the aspect of collective learning, but also the fact that this involves links with organisations. Businesses generally maintain relationships with a range of organisations that form part of their business environment. Some of these relationships, such as with technology centres or marketing bureaux may be of vital importance to business competitiveness. The industrial districts in the Third Italy (Emilia-Romagna, Prato, Veneto, etc.) present a core case of such an impact through the role of the so-called ‘Real Service Centres’ - centres which
assist particular groups of small firms in improving their performance across a wide range of business activities: marketing, technology, human resources, etc. Insights into the role of support organisations have also been derived from Germany and certain Asian countries, particularly Japan (Best, 1990, also mentioned by Porter). Essential in all these cases is that support organisations tailor their activities to particular sectors of the economy, and offer a wide range of services based on an in-depth knowledge of that sector. In addition, by close and continuing interaction with their customers, such organisations contribute to the forging of relationships between firms. By including such institutional linkages, a cluster can be conceived as a particular structure of sectoral governance, an issue that will be discussed under step four.

The role of support organisations in clustering is particularly stressed by Steiner’s definition of clustering:

“clusters are sets of complementary firms (in production and service sectors) as well as public, private and semi-public research and development institutions characterised by close interrelations and a regional dimension” (Steiner, 1997 p.17).

In addition to the inclusion of the non-business sector, Cooke (1995a, p. 11) also specifies the nature of the relationships:

Clusters are thus aggregates of firms and non-firm institutions that supply external economies of scale through their capacity for optimisation of earning practices by co-operative as well as competitive economic relations and interactions”

While the institutional dimension has taken a prominent position in recent literature on clustering, many analysts start their observations by pointing to what are seen as ‘classical’ factors behind clustering: the role of the labour market, the proliferation of specialist firms, such as producer services and machine tool manufacturers, and spill-overs between firms, especially in the area of technology. These factors go back to the original ideas about spatial agglomeration and economic clustering formulated by Alfred Marshall, which are still considered by many as constituting the basic explanation for clustering and agglomeration phenomena (Lawson, 1997a; Krugman, 1991). This leads to the last factor: spatial concentration.

(4) Spatial concentration of the business/organisations involved: For many observers, the crux of clustering lies in spatial concentration:

“A cluster is a loose geographical bounded agglomeration of similar, related firms that together are able to achieve synergy” (Rosenfeld, 1995, p.12)

As a reason for the significance of spatial concentration is the fact that all the factors mentioned so far, from business interaction, resource development and exchange, institutional development and the creation of a tailored infrastructure, benefit from spatial proximity. One reason for the emphasis on spatial concentration is that the kind of interaction that facilitates clustering is not easily done over long distances, despite all the
spectacular improvements in communication technologies (Morgan, 1997; Malmberg, 1996). Creating the right environment for sharing resources, for creating trust and ‘institution building’, requires the exchange of ‘tacit knowledge’ and hence proximity. Also, the development of the right business environment for clusters - with a specific role for technology centres, universities etc. - benefits from co-location. Undoubtedly, new technology enables the ‘global’ market reach of today’s business, and facilitates global searches for technological and market opportunities. It does not undermine the specific kind of dynamics at the local level which underpinning innovation and competitiveness.

While the role of proximity in clusters is generally accepted, there is much debate on how the different spatial levels should be envisaged. As said before, some attach much value to the fact that proximity eases the physical exchange of goods (‘just-in-time’) and creates external economies in the sphere of production and labour markets. The debate oriented on physical linkages tends to present ‘local’ and ‘global’ as substitutes or even rivals, as in the confrontation between global and local sourcing. Others have emphasised the role of proximity in the exchange of ideas and the building of a specific culture of collaboration and innovation. Various models of what is termed the ‘local-global’ nexus have been suggested, but no consensus on the issue has been reached (Doeringer & Terkla, 1995). Since this is an issue that is of fundamental importance in assessing the link between clusters and regional development, it will be discussed in more detail below.

On the ‘output’ side of clusters, three common themes can be distinguished:

(1) The resulting level of competitiveness in the wider global economy: In the case of clusters, ‘competitiveness’ may refer to a level higher than that of the firm. This interpretation of competitiveness is a ‘structural’ or even ‘holistic’ one (Sachwald, 1995). The latter leads to a vision of a cluster or a region as a competitive unit in the wider economy, in competition with other clusters or region. Cluster competitiveness can be assessed in static terms, by indications of market share and trade relations or in more dynamic terms, by including details of investments and innovation. Because it is more difficult to obtain data describing the more dynamic dimensions of competitiveness, however, most quantitative approaches are based on trade figures, similar to Porter’s cluster charts.

The application of the concept of competitiveness to a system level has stirred up some hefty debates. Well-known economists such as Krugman, for instance, consider ‘competitiveness’ as a dangerous concept especially in the hands of policy makers (Krugman, 1994). His argument, in essence, is that nations or regions are not like firms but spaces that embody both the supply and demand side of the economy, as expressed in one of his famous quotes:

Moreover, countries do not compete with each other the way corporations do. Coke and Pepsi are almost purely rivals: only a negligible fraction of Coca-Cola's sales go to Pepsi workers, only a
negligible fraction of the goods Coca-Cola workers buy are Pepsi products. So if Pepsi is successful, it tends to be at Coke's expense. But the major industrial countries, while they sell products that compete with each other, are also one another's main export markets and each other's main suppliers of useful imports. If the European economy does well, it need not be at U.S. expense; indeed, if anything a successful European economy is likely to help the U.S. economy by providing it with larger markets and selling it goods of superior quality at lower prices (Krugman, 1994 p.34)

The upshot of this comment is not that 'structural', 'targeted' competitiveness strategies are likely to be ineffective (as seems to be the view of Porter). The argument is rather that while it may work for the area involved, at a higher geographical level and in the longer term, it will be detrimental for the world economy at large. Humbert (1994), while observing a shift from an emphasis on regulating for 'fair competition' to one where governments increasingly turn into partners with businesses to strengthen structural competitiveness, warns for the unsustainability of the 'competitiveness' path in the long run.

If an emphasis on structural competition is to be avoided, this means that there is no place for featuring 'the' competitiveness of a cluster as if the latter, within the context of the wider market, is perceived as an integrated economic actor. Economists such as Krugman and Porter only allow competitiveness to be associated with productive units such as firms. Clusters then can be seen as the environment in which firms, in various ways, can improve their performance through the linkages they build in the cluster. Such a view shifts the attention from a vision of a cluster as an encompassing chain of producers which is seen as competing 'as a group' (Gomes-Casseres, 1994) towards one where clusters are associated with the framework of production and knowledge flows in which individual firms may thrive. Where competitiveness may have some structural components, such as derived from Porter's 'diamond' or 'innovation system' characteristics, that should not be translated into a holistic, 'mercantilist' concept of competitiveness.

The nature and level of competitiveness remains a conundrum, however. How can we deal with the observation that, especially in the case of agglomerated SME clusters, the competitiveness of firms highly depends on their position in a cluster, in terms of division of labour, knowledge flows, entrepreneurial attitudes? How can we classify then the synergetic effects at the cluster level which form a major contribution to the competitiveness of the cluster members? How can we interpret the fact that competing in outside markets by cluster members is regarded by themselves as a group, and that the 'cluster competitiveness' is strategically assessed by business associations etc.? One way out of this is to see the cluster not as a competitive unit, but as a shortcut for the framework in which a group of strongly interdependent competitive firms improves their competitiveness. This question is especially relevant for policy-making: should policy be aiming at the building of competitive clusters, or at the supporting of business competitiveness through cluster
initiatives? While Krugman and Porter appear to endorse the latter, many authors on regional development tend to take a position in between, tending more to a ‘mercantilist’ stance. One author who defends such a position is Cooke (Cooke, 1995a, p.5), who, in a paper on restructuring of old industrial areas claims that:

“Regional administrations can now have a ‘neo-mercantilist’ remit in relation to their regions’ economy and society.”

Another fundamental issue is that one should be cautious with policy recommendations based on a philosophy of an ‘entrepreneurial state’ in which the latter primarily refers to boosting the supply side of the economy. This leads to the concern that competitiveness only refers to the success of businesses, while it excludes other dimensions of development. Indeed, crude definitions of competitiveness thus solely refer to winning market share. Suggesting that competitiveness should be distanced from a view based on ‘competing market shares’ only, Coriat (1997, p.9) presents a more balanced definition of competitiveness. In addition to the international dimension, a social criterion is included: “the capacity to produce goods and services which respond to the demands of international markets, whilst at the same time enabling (...) citizens to enjoy a steadily rising standard of living over the long-term”.

From a more methodological point of view, competitiveness has also been discredited for being a tautological and hollow concept. An economy was seen as competitive if it was able to secure and raise its market share and what explained this performance was competitiveness. The link with clusters has been crucial in overcoming this problem by offering a substantive basis for competitiveness. What is interesting in this context is the various ways in which clusters have been associated with various models of ‘competitiveness’. Porter, on the one hand, sees productivity as the main component of competitiveness. Other authors stress technological and organisational innovation as major determinants (Morgan, 1996; Boekholt et al., 1993). Rather than being more productive, competitiveness is seen as the capability to move into product markets with higher levels of value added. According to Reinert (1995), it is this ‘quality’ dimension, i.e. the exercise of ‘picking winners’, which forms the essence of the ‘competitiveness’ concept (and of its predecessors ‘national productive power’ and ‘productive capacity’).

(2) Specialisation. At the level of an economy as a whole, a cluster approach refers to particular patterns of specialisation. This is reflected in Porter’s quote on clusters at the beginning in the chapter (“a nation’s competitive industries are not spread evenly through the economy”). It is shown by the many lists coming out of cluster studies, in which a distinction is often made between existing clusters and potential or emergent clusters (Held, 1996). The latter is also graphically illustrated by the many cluster charts and maps which highlight the strong economic activities in particular regions and nations.

Specialisation can be seen as a two-edged sort. On the one hand, it is seen as a necessary dimension to economic development. Only through building
a profile of particular strengths can a regional economy expect to sustain its competitiveness in a world of ‘global’ competition. Steiner (1997, p.19) points to the problem that many peripheral regions suffer from a lack of specialisation:

“It is one of the weaknesses of many regions in (especially) small open economies that they lack a special profile: they do a lot of things without doing anything special. (...) In terms of economics, locational advantages have turned from comparative (being relatively cheaper) to competitive advantages relying on quality elements. This locational specification is founded on a special profile - what a region is able to do along specific lines of production”.

Specialisation is thus the only way to overcome the ‘globalisation trap’, outrunning the risk of being outcompeted across the board.

On the other hand, both academics and policy-makers have pointed at some problematic aspects of specialisation. One reason why policy makers have objected to sector-based policies is because they feared that it would make the region too much dependent on a limited range of economic activities. Rosenfeld (1997) argues that this may be overcome by emphasising specialisation as a dynamic process. Specialisation should not just entail a focus on certain final markets, but rather be understood as an ongoing process of capability building with diverse market applications (Langlois & Robertson, 1995). An even more controversial aspect is the question of how specialisation should be promoted. It is one thing to explain regional competitiveness in terms of the actual patterns of cluster specialisation. It is another thing to actually try and (re)shape a regional economic profile. This issue, which will be further addressed in the section on industrial policy, also introduces the last ‘output’ dimension: identity.

3. Identity. At present there is a tendency for innovative regional policies to become a matter less of top-down administration and public control, and more of promotion, stimulation and facilitating the restructuring of economic activity (Keating, 1997). Both for encouraging and mobilising actors within the region and for ‘selling’ the region as an attractive site for investment and partner for co-operation to outsider, shaping an identity is an essential process. Cluster specialisation can be an important part of such an identity. Within the region, the idea of belonging to a competitive cluster may help to build trust and to shift the level of competition from between local businesses to between the local clusters and the outside world (Best, 1990). To the outside world, cluster specialisation may be used as a marketing tool to attract inward investments. In recent years, with the clusters becoming an established form of regional industrial policy, this has become a more important aspect of cluster approaches. An illustration of how regions sell themselves through their acclaimed cluster strengths can be found on the webpages of many RDAs.
2.3. **Step three: clusters as forms of industrial and innovation policy**

“In many cases and increasingly in the future, industrial innovation requires the intelligent conception of different forms of knowledge, technology and skills. A cluster approach provides a relatively new basis for the development of effective innovation strategies” (Jacobs, 1997 p.22)

One way to understand the development and impact of the concept, as argued before, is to look at the context in which it has emerged. The last section has already indicated how clusters fitted in the new ideas about the systematic nature of innovation, resource development, and institutional linkages. Hence, seen from a policy perspective, clusters reflect a shift in objectives from targeting territories and firms to targeting industries (Rosenfeld, 1995). In addition to such spatial-economic considerations, cluster thinking has been informed by many other fields of socio-economic development and policy-making (see for instance the contribution from Steiner in the quotation box at the beginning of the chapter).

This section will discuss the development of regional clusters as a specific concept of regional industrial policy, and focus on how clusters accommodated new ideas about how to support industrial development. There are two broad trends that have underpinned recent changes in industrial policy. The first is the evolution of industrial policy from post-war reconstruction to an innovation oriented, strategic approach focused on ‘competitiveness’. The second is a change in the geographical scale from nation to region. The last decade has witnessed a trend towards regionalisation of industrial and innovation policy. The combination of these two factors offers one of the explanations for the popularity of the regional cluster concept.

Table 5 Periodisation of industrial policy

<table>
<thead>
<tr>
<th>Main period</th>
<th>Policy description</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>late 40'-50'</td>
<td>Post-war reconstruction</td>
<td>Technology transfer from USA</td>
</tr>
<tr>
<td>60'-early 70'</td>
<td>Keynesian growth policy</td>
<td>Tackling the business cycle</td>
</tr>
<tr>
<td>70'</td>
<td>Defensive industrial policy</td>
<td>Managing decline of industries in crisis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(steel, ship-building, coal mining): “backing losers”</td>
</tr>
<tr>
<td>80'</td>
<td>(Aggressive) technology policies</td>
<td>New technology development and transfer (IT, biotechnology, new materials, environmental technology): “picking winners”</td>
</tr>
<tr>
<td>90'</td>
<td>Cluster approach</td>
<td>Integrated policies along sectoral/value chain lines</td>
</tr>
</tbody>
</table>

Source: after Jacobs, 1997

(1) Between industrial and innovation policies

Jacobs (1997) distinguishes five phases in the post-war development of industrial policy in the Western World (Table 5). Following the post-war reconstruction efforts, industrial policy was either low key or largely focused on investments in large-scale, often publicly owned, industries.
With the stagnation of economic growth in the 1970s, two major shifts can be distinguished. First, policy orientation shifted from large scale restructuring intended to address the problems of industrial decline to more aggressive, technology oriented policies. This shift corresponds to an overall change in economic policy from business-cycle focused ‘Keynesianism’ to a strong supply-side orientation (Humbert, 1994). Industrial policy became much more strategic, focusing on the fostering of high-tech activities in areas such as IT and new materials, or on the application of new management techniques to established sectors such as consumer electronics and cars. The success of SE Asian countries in shaping new industrial complexes and capturing substantial market shares in durable consumer goods presented a major source of inspiration for such an ambitious ‘picking winners’ approach. In many of the newly industrialising countries in Asia (Taiwan, S Korea, Singapore) and Europe (Spain, Portugal, Ireland), as well as some of the ‘older’ industrial countries such as the UK and the USA, this shift led to a partial decoupling of industrial policy from questions of ownership, and an increased emphasis on the industrial ‘supply base’ and the attraction of international flagships.

Different models of development emerged. Some Asian countries embarked on a ‘high road’ strategy where favourable production conditions were combined with a strong effort to encourage technology and skill transfer to both domestic firms and the local population; for these countries the emphasis in economic policy had radically moved from issues of productive or allocative efficiency to the creation of strategic advantage (Best, 1990). For the Japanese, the key factor is not productive or allocative efficiency, but strategic advantage. Others opted for a general ‘low road’ with increased flexibility in the labour market to reduce wage costs. The UK and US, in particular, the 1980s were characterised by an aversion to ‘grand’ industrial policy and emphasis on market flexibility, although some of the more strategic policies re-emerged under the banner of technology policy.

Not all of the attempts to build more strategic approaches to industrial development were successful. On the one hand, some of the ‘Grandes Projects’ failed because they were too much technology-led and failed to build a bridge with other dimensions of industrial policy, such as technology transfer, training, SME support and export promotion. On the other hand, while supply side orientation led to a proliferation of business support and technology-led initiatives (science parks, technopoles, incubator centres), generally geared to the wider business community, many lacked the sophistication to genuinely cater for business needs. What was required was a framework to combine a strategic supply-side orientation with insights into the organisational and technological specificities of industrial systems, as implied by models of ‘supply chains’, ‘filières’ and ‘value chains’. Moreover, the strategic focus has to build on a strong international orientation, both in terms of new production methods (‘best practices’) and shifts in demand. Humbert (1994 p. 454) thus stresses the systematic character of industrial policy: “designing
industry-specific policies to create resources within the national territory and, at the same time, take into account the globalisation issue demands a genuinely systematic approach.”

The emphasis on strategic intervention was further nurtured by insights coming from economists such as Krugman, Dunning and Porter. Contrary to the advocates of ‘free trade’, these authors argue that trade specialisation is based on created rather than ‘comparative’ advantages, and that small initial advantages may be of great importance for the specialisation process. Such advantages may result from chance events but may also be created by deliberate policies of technology support and market development. The link between a ‘system-oriented’ industrial policy and international trade has been one of the main pillars of the ‘competitiveness’ debate. In the words of Martin and Sunley (1995, p. 301):

“The unifying theme in newer approaches is their study of the interactions between governments and firms and their connection to trade and industrial policy within the context of a politically and economically competitive world economy, one in which governments tend to ‘create’ the most advantageous environment for national business. Accordingly, approaches re-contextualise comparative advantages to include an understanding of developments in the trade-industrial arena”.

The shaping of an advantageous environment for business development forms the essence of Porter’s cluster approach, which thus can be seen as the culmination of the re-shaping of industrial policy along the lines of resource creation and system orientation. Porter’s diamond is an attempt to capture the main determinants of national or regional business competitiveness. Porter himself, however, defined industrial policy primarily in terms of support to the national diamond factors, while he saw cluster development as something which, given a favourable diamond, was not to be targeted directly by the public sector.

In Jacobs’ view, the contribution of the cluster approach is that it supports integrated policies along sectoral or value chain lines. Compared with direct subsidies to firms, cluster-based initiatives facilitate a more market conform way of policy-making. Cluster policies have often evolved out of a blending of existing sectoral policies and innovation policies. While in some cases the pretension of more ‘integrated’ and market-oriented policies is not much more than a dressing up of old sectoral policies under a ‘cluster’ disguise, in many cases it reflects a genuine focus on differentiation and specialisation along sectoral lines. The result is a cluster-specific innovation policy which takes account of the differences in the nature and organisation of knowledge creation and application:

“Stimulating innovation in the construction clusters really entails other priorities and approaches than in the health cluster” (Jacobs, 1997 p.26).

As a concept of industrial policy, the cluster approach may underpin a quality-oriented, integrated approach to improving competitiveness.
Within a world where tactics of ‘defensive restructuring’ (Lipietz, 1992) on the basis of wage competition and various forms of deregulation and privatisation abound, cluster reflect an alternative path of upwards modernisation and restructuring. The approach chimes with the idea of ‘picking winners’, but in a more refined way than older innovation policies. The cluster approach allows for a differentiated approach targeted on a wide range of economic activities, which takes into account the variation in industrial structured and business needs. One important feature of such a view is that it may involve more than Schumpeter’s ‘New Combinations’, i.e. creating new ways of producing goods and services. Another dimension of quality improvement is the mastery of existing new technological and organisational capabilities, and the creation of cluster-level institutional frameworks to facilitate the transfer and absorption of so-called ‘best practice’. By facilitating such differentiation, cluster policies may not only serve in the strategic support to emergent sectors or the strengthening of established sectors, but also provide a basis for the ‘managed decline’ of mature sectors. Rather than emphasising ‘picking winners’, the appropriate phrase should be ‘setting priorities’ within cluster-oriented development strategy.

A core issue within the debate on clustering remains the balance between policies and support measures which are especially geared to selected clusters, and those which are of a more generic nature that may result in clustering in a broad range of sectors. In many respects, Porter’s diamond falls in the latter category. Porter’s approach is based on the idea that, while public intervention provides incentives and catalysts, it is the market that determines the direction of economic specialisation. As will be discussed in the next section, in reality many initiatives apply some degree of targeting, especially at the regional level. What is more, it has become increasingly common that the cluster perspective is used to assist just one or two sectors, as the case studies will show. The issue of ‘cluster-oriented’ vs. more generic forms of support will be further addressed below when a distinction will be made between clusters-as-target and clusters-as-method.

(2) The resurgence of the region

The emphasis on the region as an appropriate site of industrial policymaking stems from the interaction between various economic and political developments. Dunford (1992, p.159) illustrates of how new insights into regional development in the 1980s, and notably the emergence of regional success stories, triggered and justified more interest in regional policy:

“Development is (...) a question of not only resources, but also of the ways in which resources are used, and the ways economics and societies are organised. The divergent development of regional development reflects differences in their patterns of adaptation to the technological and social challenges of a new era. These differences in the degree of ‘success’ of regional economics offer evidence of the types of adjustment and the institutional structures required for a more cohesive and balanced development of the regions in Europe,
and show how essential it is to develop local and regional development programmes.

The region is seen as having re-emerged as a fundamental unit of socio-economic, political and even technological development (Storper, 1995b). Against the background of thinking about innovation and industrial policy, the discussion has especially focused on the benefits from proximity and process taking place in a common environment. A common theme already alluded to in the debate on spatial proximity is the idea that, despite the ‘shrinking’ of the globe through new information technologies, innovation remains a localised process. This notion is based primarily on the observation that innovation processes rely heavily on particular forms of interaction between different businesses and organisations within wider industrial and institutional systems. Since this interaction is often of a tacit and unplanned nature, space is an important factor:

“Geography plays a fundamental role in the process of innovation and learning, since innovations are in most cases less the product of individual firms than of the assembled resources, knowledge, and other inputs and capabilities that are localised in specific places (Malmberg & Maskell, 1997, p.28).

The idea that the region thus presents an important site for innovation does not only stem from the mere proximate location of interdependent actors. It also stems from the fact that these actors and relationships are embedded in a local socio-economic environment, in which collective conventions and routines develop which underpin the building of trust, the sharing of information and processes of collective learning. Storper (1995b) captures these aspects under the terms of “conventions” and “untraded interdependencies”. Developing a relational perspective based on ideas of collective learning and collective reflexivity, Storper (1997a, p. 256) links conventions and untraded interdependencies with notions of regional identity, resource (asset) building, specialisation, and agglomeration. In his view, the understanding of why territories and regions develop in unique ways can be explained by focusing on the following issues:

“(…) the role of territorial proximity in the formation of conventions; the role of conventions in defining the ‘action specificities’ of economic agents, and hence the economic identities of territories and regions; the economic status of regional conventions of production as a type of regionally specific collective asset of the economy; the status of conventions as untraded interdependencies; why it is so difficult for some places to imitate or borrow conventions from other places; why agglomerated economic activity comes into being and why it persists even if when the costs of covering distance are of relatively little importance to the activities at hand (…)”.

The concept of local embedding of processes of innovation and industrial development however remains a highly controversial issue. The crucial question is, where exactly do the collective resources, whether they are tangible or intangible assets, reside? Authors who stress the social nature
of economic processes tend to present embedding as a kind of elusive process which is captured by concepts such as ‘industrial agglomerations’, ‘innovative milieux’ and ‘industrial districts’. Other authors however have opposed such ‘organic’ views of regional economies by putting forward a more industrial-systemic view. Porter for instance sees the cluster system as the main level where external advantages are created (Porter, 1996). So external advantages are embedded within the system of linked industries and the support organisations, and less through the wider environment, although the latter may be important through the provision of generic skills and infrastructure. Accordingly, in Porter’s view, it is “time to shed ‘agglomeration economies’” (Porter, 1996, p.87).

A similar point is made by Sternberg (1991), who claims that regional studies have tended to confound broad territorial complexes with sector-specific complexes, ignoring critical questions about the dominant relationships between sector-specific complexes operating in the region. An alternative view has been developed by Markusen. Also disagreeing with the prevalent conception of industrial districts, she distinguishes between levels of networks interlocked at different spatial levels (Markusen, 1996). On the one hand, businesses are part of global networks in which goods, services, knowledge, etc, are exchanged. On the other hand, they participate in local networks that present other forms of exchange. This double embedding - local and global - however also implies that agglomerated industrial networks cannot be regarded as a kind of integral unit at the regional level. In the words of Amin and Thrift (1993, p.414): “industrial agglomerations […] should be thought in terms of loosely connected arrays, rather than organic wholes” (see also Oinas & Malecki, 1999).

The second explanation for the ‘resurgence’ of the region in industrial policy is of a more political nature, and is linked to recent processes of decentralisation in public administration (Schmidt, 1996). Many national governments have devolved some part of the responsibility of industrial policy to regional levels, notably supply-side instruments such as infrastructural development, business support and employment programmes. This devolution has been justified generally on the basis that regional authorities would be better able to create the right policy packages catering for the needs of local firms, and that it would allow for the shaping of regional innovative networks. However, a more cynical view is that regionalisation of innovation and industrial policy also suited the move of national governments from a redistribution to a supply-side model in which responsibility for local economic development is devolved to the regional level (Sabel, 1995). Devolution and the emphasis on local supply-side policies is thus interpreted as “smokescreens for effective withdrawal by the state from regional policy” (Fagan, 1996, p.11). The greatest fear is that full devolution of responsibility, rather than creating harmonic trajectories of indigenous regional growth, may induce interregional competition for external investments and further undermining of solidarity between regions. This argument is in line with the critique on the ‘competitiveness’ concept presented earlier.
Although regional cluster policies in themselves are no substitute for policies that address regional differences at a supra-regional level, they may offer an alternative development strategy that avoids the worst effects of interregional competition. Indeed, some authors have argued that, in contrast to the negative sum games resulting from bidding for inward investments, or the hollow initiatives of place marketing, cluster policies can be genuinely growth creating (Sternberg, 1991). However, to fulfil this promise, what counts is the way clusters policies are designed and initiated. Certain essential conditions have been flagged up in this section. To be a truly ‘quality’ oriented approach, cluster policies need to be of an inclusive rather than an isolated policy of ‘picking winners’. The approaches also need to reflect a genuine attempt to integrate different strands of industrial policy. A pressing question is at what level processes of collective learning and collective resource building take place - region at large, specific industrial clusters, inter-firm networks - and how they are governed. A further issue is how local cluster policies relate to industrial and regional policies at higher spatial levels, and how negative aspects of interregional competition are monitored and addressed. Many of these issues will depend on the way the policy is implemented and embedded in the institutional framework. This will be discussed in the next section.

The question of ‘inclusion’ not only relates to the involvement of businesses and other social partners in a region, and the way an integrated policy is designed. It also involves an issue that lies at the heart of the cluster approach: targeting. The essence of targeting is that policy-makers select certain activities or sectors \textit{ex-ante} as the main objects of cluster policies. Particularly in academic thinking on the use of clusters approaches in industrial policy literature, targeting features as a highly controversial point. Porter’s seminal work on clusters, for instance, is vehemently opposed to identifying sectors or clusters for targeting because he alleges governments are not capable of understanding future economic developments in sufficient detail: “governments have a poor track record in selecting sectors where the subtle conditions for (...) advantages are present” (1990, p. 656). Policies should be facilitating and complementary to market-led process of specialisation, rather than intervening in the economic structure. Through \textit{ex-ante} targeting, cluster approaches largely entail a kind of return to an interventionist, selective, top-down approach in regional policy similar to the 1980s (Table 5). The fear of taking the wrong direction by targeting has also been the reason for government officials to refrain from following top-down clustering models (Rosenfeld, 1997).

Other authors have used recent examples from for instance Asia to argue that authorities have been successful in creating new sources of economic strength. In Best’s view, one dimension of the strategic concept of competitive advantage which underpinned Japanese industrial policy was a ‘navigated sector composition’, based on developing organisational superiority even in sectors regarded ‘mature’ in the West. Similar views have been espoused in the context of regional development. Sternberg (1991), for instance, argues that regional cluster initiatives should not
simply advocate targeting, but be geared to changing the relationships between firms and local institutions, that is, to provide an environment and incentives through which local agents learn to improve collective efficiency and innovative capacity. One of the consequences of this view is that, in many regions, the most interesting sectors will not be the well-established ones, but rather clusters of firms whose incipient and emerging interrelationships can be strengthened through policy initiatives (Sternberg, 1991). A more sophisticated approach can thus be developed which squares a bottom-up approach with a ‘top-down’ monitoring and steering of cluster. Rosenfeld (1997) indeed sees most of the objections against interventionist, ‘top-down’ approaches as undue. Clusters should involve a dynamic process of competence building, and not result in patterns of static specialisation. By following a dynamic approach, policymakers may also be able to address one of the other strongest arguments against cluster approaches: the fact that targeting implies an unequal treatment of firms in different business areas (Rosenfeld, 1995).

Despite some of the reservations against top-down approaches, other authors have argued that cluster-based policy will always require strategic choices involving some degree of targeting (Nootenboom, 1993; Beije et al., 1993). In practice, the process of identifying and auditing ‘clusters’ has become a major theme in the development of cluster policies and a major source of business for consultancy providers. Such studies generally combine established statistical methods, such as employment and production data analysis, ‘shift and share’, input-output analysis, and the use of technology indicators, with the capturing of qualitative information from industry representatives and experts about perceived strengths and weaknesses. The results are generally summarised in the form of target sectors and imaginative cluster maps, which often turn out to be important elements in local discourses on regional industrial policy. One of the major commercial providers of this type of knowledge is, perhaps ironically, Porter’s own consultancy Monitor. A clear difference can be observed between Porter’s academic concerns about sector targeting and the ‘social engineering’ of networking on the one hand, and the more pragmatic policy recommendations produced by Monitor. Although Monitor’s conclusions tend to be presented with some degree of moderation, recording stronger and weaker clusters, as well as more and less promising clusters remains an essential part of the consultancy’s product in regional industrial policy.
Chapter Three. The cluster concept in seven steps: towards regional initiatives

Chapter Two focused on clustering as a more analytical concept, exploring the link to space, industrial development and innovation, and giving a first indication of the particular relevance of the concept at the regional level. The present chapter will continue the discussion highlighting those dimensions that have especially contributed to the application of the cluster concept at the regional level, making clustering part of policy strategies geared to regional development. The first section will explore the role of collaboration and the ‘associational turn’ in regional development, followed by a section on how the focus on SMEs has informed thinking about clusters. It will be shown that, by associating with these new ideas, how the concept of clusters has moved further away from its original connotation as given by Porter. The last section will highlight issues that stand out in the present debate on clustering and cluster initiatives.

3.1. Step four: clusters within an ‘associative model’ of regional development

“Interestingly, there are pronounced signs (....) that associative thinking, partnership building and encouragement of policy networks to facilitate the emergence of new industrial clusters are developing” (Cooke, 1995a p.12).

Policies and strategies of regional development have increasingly been geared towards what can be called the ‘soft’ dimension of the economy. The soft dimension includes the more social and communicative dimensions of economic development, and is particularly associated with the performance of an economy in terms of innovation and the adaptability to external pressures, that is, with a dynamic interpretation of competitiveness. Key elements of the soft dimension are processes of networking, partnerships, and the creation of norms and values that guide the behaviour of agents in a regional economy. Recently authors have captured these ideas by developing an ‘associative model’ of regional development (Amin & Thrift, 1995; Cooke & Morgan, 1998). The idea underlying an ‘associative model’ is that there is ‘third way’ of economic governance, which sits between a system of top-down ‘dirigiste’ management and full decentralised market control, which is generally associated with a neo-liberal points of view. Such a third way is accomplished by processes of networking and ‘institution building’ which
bring together local agents from different social backgrounds and raise the collective capacity for action and strategy development. An associative model thus underpins the idea of ‘endowing the region with agency’ (Amin & Thrift, 1995), that is, the development of regional governance structures with a capacity to influence the development of the regional economy.

The original formulation of clusters - with a strong emphasis on industrial organisation and competition - meant that it disregarded most ideas on networking and associational trends. However, increased attention particularly for the role of inter-firm and inter-organisational collaboration, meant that the more recent approaches to clustering have become a core issue in the debate on the ‘associative model’ of regional development. What serves the associative model in particular is that the cluster concept helps to link two sets of core concepts within regional development theory: (1) concepts of networking and associative process at the level of firms and organisations and (2) more structural notions of specialisation and identity at the regional level. Through bridging these two levels - micro/meso and economic structure - , the cluster concept opens a strategic window on processes of ‘institution building’ which goes further than generic terms such as networking and collaboration. It is this structural dimension to clusters which make it a useful concept in the design of regional development strategies which are based on associational principles, and which aim at addressing the overall economic profile of a region. The usefulness of clusters has also been endorsed by empirical observations. Cooke’s summing up of work on the development of institutional capacity aiming at regenerating old industrial areas, for instance, shows that cluster approaches have been more successful than innovative networks (Cooke, 1995b). His account thus provides a strong support for “associative thinking, partnership building and encouragement of policy networks to facilitate the emergence of new industrial clusters” (p.12). One way in which cluster-based associational strategies can be effective in supporting businesses is through the establishment of ‘industry councils’ which assist in need identification as well as strategy formulation (Rosenfeld, 1995).

Another interesting application of clusters within an associational approach can be found in the European RIS (Regional Innovation Strategies) and RITTS (Regional Innovation and Technology Transfer Strategies) programme. Encouraging regional consensus and capacity building, the RIS and RITTS initiatives aim at identifying a stock of innovative projects. Important attributes of these projects are networking and experimentation, and the linking of regional and international networking processes. Suggestions for the process towards consensus building are presented in a practical handbook (European Commission, 1996). The main process is to form various panels to co-ordinate and govern the process of strategy formulation, combining people from different backgrounds (managers, economists, technical specialists, public sector representatives and planners). A distinction is made between the strategic panel with central overview, the international experts’ panel,
with an important task in the evaluation procedure, and the sector panels, focusing on the support for specific clusters.

The link between an associational approach to regional development and a cluster approach can be further clarified by distinguishing three processes underpinning the associational model: networking, trust building and the shaping of territorial governance structures.

(1) The importance of networking as a way to develop and apply resources at the level of a group of related firms or value chain has already been presented as one of the cornerstones of the cluster approach. In an institutional-associational account, a business sector can be presented as “a networked association of producers of complementary products” (Best, 1990, p. 132). An significant part of the dynamism of an industrial system is attributed to the emergence of new forms of industrial governance between ‘market’ and ‘hierarchy’ (i.e. firms) and the way these are embedded in the wider geographical environment. This approach chimes with the organisational ‘resource based’ perspective, which stresses the links between different but complementary competencies as a major factor in raising competitiveness. Langlois and Robertson (1995) argue that it is especially the dynamic aspects of industrial development - the need to adapt to changing competitive environments, the pressure to innovate - which determine which forms of industrial governance - integrated firms, networked firms, organised markets - are most effective. In their view, businesses rely on both internal and external capabilities, and the relative strengths of these capabilities will have a strong impact on the shape of business configurations. At the level of a sector or region, industrial development is determined largely by the ‘systematic’ nature of how the flow of goods and information and processes of innovation are co-ordinated. One important ‘systematic’ dimension is the process of modularization and standardisation in the wider industrial system, in which associational trends are often of vital importance. To understand the development of industrial networks, Håkansson and Johanson (1987) see them as specific governance structures or modes, which are characterised by external and internal forces. External forces relate to economy-wide factors (regulatory, macro-economic) as well as industry-specific factors (e.g. changing market and technological conditions). Internal factors involve the standards, norms and values developed in the system and the way the governance structures mediate the interests of the agents involved. Also markets themselves have been interpreted in terms of specific institutional configurations and evolving governance structures, giving rise to more historically and geographically differentiated perception of markets (Beije & Groenewegen, 1992).

At the regional level, the link between networking and associational tendencies on the one hand and innovation on the other has been captured under the label of Regional Innovation Systems, and more recently, also under that of the ‘learning region’ (Cooke et al., 1996; Asheim, 1996; Howells, 1996). Two basic interpretations of the region as innovation system have been put forward. On the one hand, authors have portrayed
RIS’s as subsystems of national or sector-based systems. Breschi and Malerba (1996), for instance, present various clues to how technological and sectoral trajectories may develop distinctive spatial features, and when they foster the formation of local clusters. Also in line with the subsystem view, Howells (1996) argues that, even for regions in the same national environment, what counts is how (national) educational and regulatory environments are delivered ‘on the ground’, which depends primarily on local institutional capacity. Another approach is to see RIS’s as small versions of national systems, where innovation is fostered through the interaction between business and a variety of knowledge centres (universities, business support, research centres etc). Cooke’s (1998) description of the origin of the term ‘regional innovation systems’ presents an image of the region as a ‘collective order’ characterised by a strong interplay between localised systems of territorial governance and business innovation.

Developing the idea of ‘technology coalitions’ Storper (1995a, p.908) argues that, while the region may be an important level for innovation, analysis and policy also need to focus on sectors, and on what are seen as genuine opportunities for benefits through co-operation. Hence, referring to initiatives to form regional groups of firms to promote innovation he makes the following qualification: “Here we do not just mean any group of regional firms, but those groups that can legitimately represent the way they are tied together into a real or possible technological space via synergies, which has demonstrable evolutionary potential, and where synergies are regional in nature.” Storper envisages two kinds of coalitions: encompassing coalitions and regional technology foundations with a more sectoral focus (RTFs). In order to justify support for any form of regional coalition or cluster, they need to demonstrate that they are sufficiently representative and non-exclusive with respect to a certain business activity, and that they exhibit sufficient levels of (potential) coherence and synergy.

(2) Supporting collaboration and building trust: To understand the development of industrial governance structures, particularly processes of networking, and the way they impact upon competitiveness, increased attention must be paid to the social aspects of economic development. Authors following an associational approach see economic action as socially embedded, making the fate of an industrial system dependent on the social history of the area in which it is located. However, recent literature on collaborative forms of inter-firm relations has claimed that collaboration and trust are not the mere consequence of fortuitous social developments. Such a historical, even ‘accidental’ view of trust building emerged for instance in the literature on ‘social capital’ especially in the view of Putnam (1993). Opposing any hint at a “paralysing acceptance of history as destiny” Sabel (1992, p. 217) refers to trust as both ‘thick’ - through the way it binds parties in patterns of recurrent interaction, - and ‘thin’, signifying that trust might be re-allocated, that it is makeable and breakable. This emphasis on the possibility to shape and manipulate social factors presents a cornerstone of the associational approach.
According to Lorenz (1992), however, social factors can only partly explain the emergence of relations of reciprocity and trust. In what is called an ‘eclectic’ approach, the author also invokes another, more economic reasoning, based on concepts of self-interest and the rational prisoners dilemma. As long as agents know that collaboration generates collective benefits and they are able to distribute these benefits adequately, they will be prepared to invest in networking processes. In time, the building of trust can thus be interpreted as a process of the accumulation of ‘credit slips outstanding’. This term is used by Coleman (1987) in his conceptualisation of ‘social capital’. Coleman also emphasises the role of informational channels and behavioural routines in the formation of ‘social

Lorenz mentions two possible causes of a decline in co-operation. First, external pressures, such as market threats, or internal friction, such as the perception of an unequal distribution of revenues emerging from collective action or competition for scarce local resources may reduce the faith in potential advantages of mutual co-operation. As examples, he quotes the breakdown of trust and co-operation in the Sheffield cutlery and Birmingham metalworking districts in the 19th century, and the St Etienne ribbon cluster in the inter-war period. Second, collaboration may also be weakened as a result of processes of internationalisation, through which the development of local plants may become more determined by their position in global corporate networks than that in the local economy. The latter is also shown in Kantor's recent study of the Boston area, in which she focused on the impact of globalisation on business behaviour. Kantor found that due to an increased focus of businesses in securing their own competitiveness, a process of ‘balkanising’ is effectively breaking down the institutional ability to build alliances between businesses, government and community organisations. She thus recommends:

“What is needed is a new kind of community-building that will develop new leadership and create new mechanisms for linking organisations and solving problems. An eternal task therefore seems to be the alignment of business interests with that of the local community.” (Moss Kantor, 1995, p.153).

A recent elaboration of such a combination of a ‘prisoners dilemma’ perspective on business interaction with an institutional perspective is offered by Oughton and Whittam (1997). The authors present a list of issues in which collaboration may increase the performance of a group of firms (Table 6, column 1). They also list for each area the threats of defection (column 2) and the possible ways for the network to address these problems and to govern the development of the network (column 3). The benefits stem from the fact that collaboration facilitates investments that are not possible by stand-alone firms, thus encouraging a high quality, high value added strategy, while a certain degree of rivalry is maintained. Opportunism and defection by individual firms are constrained by the development of an associative culture in the form of a shared identity and belief system, and the existence of a hub or institutional layer with the power to impose sanctions on bad behaviour. Power, such as residing in a
large core firm, can play an important role in supporting network development, although this depends highly on the particular strategies of the hub actor involved.

<table>
<thead>
<tr>
<th>theme</th>
<th>collaboration benefits (capability development)</th>
<th>defection threats</th>
<th>remedies and sanctions (governance solutions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>innovation</td>
<td>cost sharing; avoidance of wasteful duplication; improve appropriability by involving free-riders</td>
<td>withholding knowledge to partners; outsiders appropriating ideas</td>
<td>shared identity and belief system; specific institution capable of penalising defectors</td>
</tr>
<tr>
<td>finance</td>
<td>collective collateral, improving information provision on financial position for vetting of applications (co-operation itself seen as an asset)</td>
<td>partners not keeping up payments, undermining the co-operative scheme</td>
<td>co-operative with punishment system</td>
</tr>
<tr>
<td>marketing and advertising</td>
<td>en bloc marketing and advertising</td>
<td>free riders</td>
<td>institutionalisation at a regional/network level (origin marketing)</td>
</tr>
<tr>
<td>training</td>
<td>joint investment in training</td>
<td>poaching of staff between firms</td>
<td>institutionalisation in training boards responsive to SMEs, non-poaching agreements</td>
</tr>
</tbody>
</table>

Table 6 Collaboration benefits and instruments (Source: based on Oughton & Whittam, 1997)

(3) The shaping of territorial governance. The associational perspective not only stresses the development of particular social patterns of behaviour within industrial systems, but also the way this intersects with the shaping of forms of territorial governance. In the words of Rhodes, governance “(...) means there is no centre but multiple centres; there is no sovereign authority because networks have significant autonomy. The distinction between the public, private and voluntary sectors becomes meaningless. All play the game of ‘grantmanship’. These game-like interactions are caused by the need to exchange resources and negotiate shared purposes” (Rhodes, 1997, p.109). In the practical context of territorial development, governance can be understood as: “local government (elected agencies) and other agencies (non-elected agencies or 'quangos') responsible for delivery and management of services at the local level, and the relationships between them.” (Wood & Ache, 1999). Governance capabilities are thus a reflection of institutional development and networking.

Best is one of the authors who explains in much detail how specific institutional developments contribute to the competitive strength of certain territories. The success of some Asian countries in seizing substantial
market shares in certain sectors is attributed to an “extraordinary creativity in institution building” (Best, 1990, p.199). Institution building is also a key factor in the success of regions in the Third Italy, where the effectiveness of the institutions is related to the fact that most were established as quasi-public organisations accountable to public officials but not managed by civil servants. At the national level, other authors have pointed out the role of corporatism in the regulation of wages, public investments, education and other factors underpinning ‘competitiveness’ (Beije & Nuys, 1995). While endorsing the concept of local institutional capacity, Best’s account also reveals many of the complexities surrounding the issue of local governance structures. It is not just ‘institution building’ which will create effective forms of economic support; the effectiveness of governance structures will depend on the specific ways interests are mediated, agendas are set and collective strategies are developed. For instance in the case of the Third Italy, Best observes that: “Local government has been able to pursue an aggressive economic program and retain a degree of insulation from interest group politics by creating a range of extra and inter-firm institutions. Their purpose is to promote the development of small firms within a democratically accountable political environment” (Best, 1990, p.209). However, while territorial governance structures should thus somehow be protected from strong political interference, it should not turn into “just listening to firms” (Sabel, 1995, p. 23), not just the static provision of services demanded by individual firms without a collective sense of direction (Cooke, 1995a). So, the emphasis should not be on the mere presence of institutions, but the processes that define how institutions affect the relationships within and between businesses and other local organisations:

“what is of significance here is not only the presence of a network of institutions per se, but rather the processes of institutionalisation (...) that both underpin and stimulate a diffused entrepreneurship - a recognised set of codes of conduct, supports and practices which individuals in institutions can dip into with relative ease (Amin & Thrift, 1993, p.417).

A similar message can be found in Cooke’s discussion of how institutional capacity, geared to innovation, should be configured. What is essential, in his view, is a network architecture of support organisations based on “flow-processes (...) rather than on the prosaic basic-specific competencies of administrative institutions. It goes beyond the static supply of services to individual firms and implies a collective setting of direction (Cooke, 1995a, p. 14). An associational structure may thus imply a shift from a system which is primarily geared to offering solutions to perceived problems to one which brings various stakeholders together in the development of a coherent and intelligent set of regional development strategies.

How then should such an economic governance structure be developed within the context of a wider socio-political system? Amin and Thomas emphasise the fact that economic strategies should be based on what they
call a ‘negotiated economic governance’. Looking at evidence from Denmark, the authors explain Denmark’s economic success in terms of the way it has followed ‘a third way’ beyond market and plan, involving the democratisation and decentralisation of decision making, the preservation of collective solidarities, emphasis on inter-institutional dialogue, and the shift of the state towards relations of reciprocity and trust with other governance institutions’ (Amin & Thomas, 1996, p. 255). Especially in the case of Denmark, economic governance and the emphasis on networking should be seen in the context of an attempt to strengthen the position of (associated) small firms versus that of large corporations.

An ‘associative model’ of regional development, therefore, should not only be seen as a way to improve the interaction between regional businesses, but also to secure that regional communities benefit from the economic success of firms established in the region. Business interests are of vital importance for regional development, but only as far as they can be tailored to regional interests, as already suggested by Kantor’s quote above. In a radical view, building local ‘powers of association’ may even be a process of countering the dominance of large ‘footloose’ firms. In the words of Amin and Thrift (1995, p.48):

“an attempt to set up networks of small firms and intermediate institutions that can act as a counter to (...) the power of the networks of large corporations and dominant institutions (...) to ‘embed’ large corporate networks so that they become more committed to particular regions”

This quote raises some of the most critical points in the shaping of regional governance structures, such as the question of accountability and monitoring, and issues of inclusion and exclusion (Enright, 1994a). Whose interests are represented in processes of institutionalisation, in strategy development, in policy design and implementation? What is the position of small firms versus large firms? What is the position of unions, and other social and interest groups? Indeed, one of the observations that can be made regarding the growth of partnerships and institutional networks is that they are generally forged on an alliance between (big) business and the state. To some extent, this alliance has been justified on the grounds that the interplay between industry and government is the crux to an effective industrial policy (Dunning, 1991; Humbert, 1994). Other authors however have pointed to the fact that governance structures should be more inclusive, for instance by being responsive to the voice of unions and representatives of small firms. As part of a more inclusive, alternative strategy, Batt (1994) advocates the creation of central organisations, such as regional development agencies (RDAs) as the ‘institutional expression of regional political networks’. As central moderators and facilitator, such agencies should act as pivots in regional negotiation and mobilising networks to establish a co-operative and consensus based framework for industrial policy. Other, mainly Italian authors, furthermore, have emphasised the inherently political nature of any more strategic approach to business support. Miller and Bianchi (1994) distinguish between progressive coalitions, which exploit compatibilities between networks,
increase specialisation, and foster innovation, and regressive coalitions, which protect vested interest. In the organisational embedding of service centres, Bellini (1998) makes a distinction between supportive partners, ‘troublers’ and ‘opponents’, and gives suggestions of how the latter may be turned into harmless critics or even converted into supporters.

While theorists have gone a long way in thinking about appropriate typologies and trajectories, how representative, progressive forms of governance are to be organised in practice remains largely an unresolved question. One suggestion is that, as part of a commitment to full representation of all social partners, RDAs should organise ‘round tables’ and regional ‘summits’ to secure democratic control and address problems of inclusion and exclusion (Ache, 1997; Rosenfeld, 1995). An ideal image of an RDA is thus a strategic organisation which, as a spider in a complex web of institutional formation and linkages, facilitates consensus building, institutional change and learning, while, on the other hand, ensuring the effectiveness and democratic control of the local institutional process. RDAs can thus be presented as the ‘animateur’ and central broker in the processes of networking and ‘institution building’ (Morgan, 1995). As central hub in a wider and evolving institutional structure, moreover, a development agency should have a two-edged supervisory and ‘reflexive’ role. On the one hand, there is a need for keeping track, including some steering, of the regional industrial trajectory. On the other hand, central organisations should nurture a climate of learning, experimentation and diversity. The local governance structure should thus be geared, to use the words of Sabel (1994), to a process of ‘learning-by-monitoring’, which combines a top-down framework of assessment and strategy development with a strong support for bottom-up initiatives. With respect to the latter, the process of ‘institution building’ should allow for variation, encourage experimentation, tolerate reform, re-negotiation, and even failure and assume a capacity to learn from failure (Garmise et al., 1995).

Within such a two-way model of regional associationalism, clusters play a double role. On the one hand, clusters may represent bottom-up organisational frameworks through which sector-specific interest are mediated, institutionalised and translated into cluster initiatives. A condition for such a development is that there is already some kind of ‘associative culture’, some level of networking, collaboration and trust among businesses and related organisations. One of the messages coming out of associational thinking is that is not so much the status of support providers that matters (in the sense of being public or private), but the way providers are embedded in an organisational structure representative of local business as well as other local community sectors. On the other hand, clusters may reflect part of a larger governance structure, and subject of strategy development which addresses the ‘cluster map’ at the regional level. The end result of such a double vision can be seen as a ‘cluster of clusters’ (cf. Rosenfeld, 1995, p.41), an overarching regional governance structure that forms an alliance between ‘bottom up’ oriented cluster-based alliances.
A final reason why a two-way model may be advocated is because of the fact that ‘bottom-up’ approaches, generally favoured in the association-oriented literature, also have certain caveats. Bottom-up approaches will benefit from the fact that, because they are initiated by agents directly involved in certain business activities, they can be expected to bring with them certain levels of membership support, commitment, leadership and, last but not least, resources for matched funding (Rosenfeld, 1995). However, by solely responding to bottom-up initiatives, regions will clearly run the risk that only business groups will receive support which already have certain levels of associational capabilities, organisational and financial leeway and political clout. Other activities may have clustering potential but lack such a starting point. Top-down intervention, as part of a region-wide governance structure, may thus offer special assistance to ‘association-weak’ sectors in the economy. One sector, to which the discussion will turn now, is that of small and medium sized firms.

3.2. Step five: clusters and business support to SMEs

“The requirements of small and medium-sized business seldom are simple or one-dimensional. Needs for new technology, for example, are linked to needs for capital, training and reorganisation and markets (...). Providing specific services organised by specific clusters is another service option. Such services can be provided by agency staff drawn from, and therefore able to understand the industries served, or can allow current staff the opportunity to learn a particular industry in-depth.” (Rosenfeld, 1995, p.37)

A final area that has given a major impetus to policy application of the cluster approach at the regional level is that of support to small and medium sized enterprises (SMEs). Recent decades have seen an impressive growth in policy initiatives targeted at SMEs, with increased emphasis on the improvement of innovative performance and management capabilities. Recent trends also show a growing interest in issues of networking, ‘institution building’ and clustering, both in the delivery of support and the objective of support. This last trend also underpins the two fundamental ways in which the cluster approach has played a role in shaping policy initiatives. First, clusters have become a model to nurture processes of collaboration and networking among small firms. This has induced a whole range of initiatives from brokering and facilitated focus groups to assistance for the creation of joint business ventures. Second, clusters have inspired new ways of policy development and delivery, as part of a move towards more integrated, more effective and cheaper forms of business support. Both aspects will now be discussed in turn.

3.2.1. Clusters and networking as target of business support

To understand the present debate on the position of SMEs in business support, a few notes on the historical context will be helpful. Until the 1970s, SMEs were largely ignored in industrial policy and support. Like bicycles in transport or organic farming in food production, small firms were considered as the heritage of a past age, which hardly suited the
model of large-scale, centrally planned modernisation of Western economies. The turn-around happened in the 1970s and 1980s, when SMEs were claimed to be important contributors to employment and innovation. While the evidence on SME development remains to be subject of fierce debate (see Birch, 1987; Karlsson et al., 1993; Acs, 1995; Harrison, 1994 for some salient aspects of this debate), the claims had enough power to trigger the development of a burgeoning support industry focused on SME development. In many countries, the emphasis shifted from giving subsidies to large companies to fostering an ‘enterprise culture’. With respect to innovation, a parallel shift occurred from supporting primarily scientific research to creating schemes of technology transfer and building learning environments. This shift was accompanied by an adoption of a more interactive, and organisation-focused perspective on innovation in which management and skill development emerged as important issues.

Networking in space

The focus on networking was inspired by observations that the emergence and growth of innovative SMEs showed particular geographical features. In both more traditional and ‘high-tech’ economic activities, patterns of spatial agglomeration or clustering became the basis of a new model of economic development. Examples are regions in Mid-Italy (specialising in more traditional sectors such as clothing, footwear and ceramics), hi-tech districts such as Silicon Valley and the M4 core corridor west of London, innovative manufacturing regions such as Baden Württemberg and service centres such as London and Paris. Initially, ideas on networking and collaboration were especially derived from the concept of ‘industrial districts’ and ‘innovative milieus’ (Lagendijk, 1997a), in which the dynamics between small firms and the creation of a favourable local economic environment were seen as the main drivers behind regional competitiveness. Inter-firm dynamics were interpreted in terms of pervasive flexibility, far-reaching specialisation and the development of market structures that favoured the right balance between competition and collaboration. This chemistry produced two vital ingredients of competitiveness: collective efficiency “derived from the advantages that clustering bestows upon individual small firms’ efficiency” (Sengenberger & Pyke, 1992, p.15), and collective learning. The latter may be described as follows: “the whole idea of collective learning is to identify and understand the processes by which locally based factors act to facilitate learning amongst the whole ensemble of local firms and organisations(...)” (Lawson, 1997a, p.3). Putting these together, industrial districts can be seen as one type of effective organisational arrangements for the generation of innovation and quality-based growth (Langlois & Robertson, 1995).

Especially in the 1970s and 1980s, the ‘small firms’ success stories led to a pervasive ‘small is beautiful’ account of regional development. Not only were SMEs seen as sources of innovation and growth, they were also preferred to the inflexible, ponderous large corporation. Moreover, in
addition to their role as cradles of entrepreneurship and flexibility, SMEs were also regarded as more socially responsible within the community. The latter aspect was seen as a two-way process. While the revenues from innovation and growth accrued to the local community, the community - by a process of ‘institution building’ - fostered an enterprise culture favourable to SME development. A romantic idea of competitive regional development thus emerged, which can described with the Gramsci’s term of an ‘integral economy’. The basis for an integral economy is a community “in which people are linked by the bonds of a shared history and values, where specific institutions work to the benefit of people and where codes of behaviour, lifestyles, employment patterns and expectations are inextricably implicated in productive activity” (Brusco, 1995, p.6). Apart from supporting a high degree of flexibility and creativity, and hence success in the global economy such institutions and codes ensure that everybody will be able to participate in the integral economy. It also ensures, through the way firms are embedded in the local economy, that economic benefits derived from the regions competitive position will be spread throughout the community.

While industrial districts have had a strong impact on the development of network-based support initiatives, the romantic ideas of an integral economy had to be toned down. Some concepts have found their way in circles of policy makers and support organisations, notably ‘embedding’ and the idea of a favourable ‘milieu’ or culture for innovative activities, and more recently the emphasis on community development. In practice, however, measures had to be more ‘down to earth’. Two broad categories of investment can be distinguished. On the one hand, special spatial investment zones were established, in which the co-location of specific types of firms was expected to trigger interaction and the shaping of a local ‘innovative milieu’. A second, non-spatial set of initiatives focused on promoting networking and ‘institution building’ through bringing firms together in groups and the formation of associations (for an overview of major categories of organisations of SME support, see Table 7 below).

The results of the spatial zoning initiatives are visible in almost any city or region in the Western world: business parks, incubator centres, science parks, technopoles. Most of these sites are dedicated to SME development, with emphasis on hi-tech development, although some also include subsidiaries of larger companies and research centres (especially in the city-based technopoles). In terms of fostering local dynamics and innovation, however, most of these initiatives have been somewhat disappointing. While there are cases of spectacular success, such as the Stanford and Cambridge science parks, most initiatives did not show the expected level of internal ‘chemistry’ in terms of knowledge exchange and commercial interaction. One core reason for this failure seems to lie in the fact that it was assumed that co-location of firms, often combined with the presence of a key technology source such as a university, would trigger such interaction. In the classical science park, clustering technology sources and users was originally seen as an adequate ‘connection policy’ towards SMEs. Critics in the 1980s however already pointed out that this
was far from being the case, and that it was important for science park managers to look beyond technology and offer different types of support (Monck et al., 1988). In their study of technopole development, Longhi and Quéré point at the fact that external linkages seem to be more important than internal networking, which they also attribute to the lack of institutional support. In the case of the Sophia-Antipolis technopole, the author state: “it has taken a long time for a local organisation to have sufficient trust in the other components of the project to be interested in developing local collaborative processes” (Longhi & Quéré, 1997, p. 236).

With clusters of high-tech firms, the scope for internal linkages appears to be limited because of the highly specialised nature of input requirements. Even if internal linkages developed, another common problem was that, apart from the employment effects, few benefits spilled over to the local economy. Many science parks and technopoles thus evolved as a kind of hi-tech enclave in low-tech environments (Massey et al., 1992) (see also Table 7 below).

**Behavioural approaches**

Partly as response to these unsatisfactory outcomes, attention and resources have shifted to non-spatial measures. New policies shifted to what may be labelled as the development of a ‘soft infrastructure’, of a support system facilitating technology transfer and business development programmes for SMEs, skill development and the building of ‘social capital’. In line with the institutional and associational literature, increased attention was paid to the behavioural aspects of business development, which inspired attempts to foster an entrepreneurial spirit in the business community, and to support various forms of networking activities and ‘institution building’. To some extent, this turned out to be even more of an uphill exercise. Initiatives such as science parks could at least start with the planning of some hard infrastructure and the design of an investment strategy. Network and institutions-based initiatives however, while rich in sources of inspiration, high-level theory and alleged success, lack such a tangible starting point. On the contrary, the theory and discussion of success models revealed one major dilemma: the interest in and the success of collaborative and associative ventures are highly dependent of the local business culture, notably attitudes towards co-operation, the inclination to participate in associations, etc. (Gertler, 1996; Malecki & Tootle, 1996; Lipparini & Sobrero, 1994; Tödtling, 1994). Explaining the success of a few innovative regions in the world in terms of networking, collaboration and institutions is one thing; translating this into a development formula for laggard regions is obviously a different matter.

As part of the creation of strategies geared towards the development of laggard regions, researchers drew on evidence from studies on the behaviour of SMEs outside the ‘success model’ regions. A general observation made in lagging regions was that local businesses are behind in the adoption of new technology. As a first step to closing the gap with more competitive regions, firms need to address their information and innovation deficits. So, to what extent could networking strategies help to
upgrade firms in this respect? One of the conclusions drawn from research on where SMEs obtain information is that key sources are neither found in the general technology infrastructure nor the wider market or sector in which they operate. Instead, surveys show that information is obtained primarily from what may called the actual network of firms and organisations with which firms are dealing on a daily basis (White et al., 1988; Hassink, 1996). The actual network represents a subset of the market environment of the firm, and consists of the suppliers, buyers and other related companies with which firms are trading and communicating. SMEs, in particular, seem to be reluctant to look beyond the established boundaries of their actual networks (Scott, P. et al., 1996). The reasons for this selective approach must be sought in practical constraints for instance time and resource limitations, as well as in cultural factors. A general observation is that SME owner-managers are unwilling to compromise their independence, in the sense that they co-ordinate their contacts according their own practical needs. This is not to say that SMEs aim for isolation, but that many do not tend to open up for looser types of contacts which might broaden their horizon of knowledge acquisition.

So how can firms be convinced that opening their ‘fortress enterprises’ to more collaborative links may be helpful, that other access to the knowledge of firms may present a major source of learning? While authors have given indications of how a basis for shaping such attitudes can be developed - as indicated by Sabel’s (1992) concept of ‘studied trust’, and learning-based strategies (Storper, 1997b) - the question remains how to translate such ideas into effective policies. When a culture of co-operation is lacking, how can initiatives be built up based on a philosophy of networking and institution building? Rosenfeld (1996) suggests that, depending on the context, two basic approaches can be distinguished. Where traditions of networking are absent and levels of trust and collaboration are low, a good approach may be to launch a networking programme through the mediation of well-trained brokers. The best known example of such a policy is the Danish Networking Programme. This programme was aimed essentially at changing the attitudes and habits in firms, to convey the benefits of collaboration, both at a local and at a wider scale, to develop the ‘relational capabilities’ of SMEs, and to overcome resistance to technological change and other innovations. When a certain ‘associative culture’ exists, on the other hand, there is scope for network-based strategies that may involve
Table 7 Major institutional forms of technology support to SMEs.

<table>
<thead>
<tr>
<th>Category</th>
<th>Technopoles (incl. Science Parks)</th>
<th>RTACs (Regional Technology Advisory Centres)</th>
<th>Real Service Centres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>land/property-based form of technology policy, geared towards the establishment of a spatial agglomeration of hi-tech businesses and organisations</td>
<td>regional organisations providing information, advice and assistance on technical matters to business enterprises, sometimes linked to property development, often offering referral to technology sources</td>
<td>regional organisations that combine collaborative R&amp;D, technical services such as testing, specialist information services and training, with a focus on a specific sector or technology areas</td>
</tr>
<tr>
<td>Policy setting</td>
<td>spatial planning; ‘key role of park/pole managers’</td>
<td>demand-led innovation policy</td>
<td>sector/cluster-based development often following an associational perspective</td>
</tr>
<tr>
<td>Technology management</td>
<td>no explicit mechanism of technology transfer</td>
<td>offering integrated support packages; sometimes co-ordinating regional support structures</td>
<td>centres as ‘technology watch’ and ‘marketing watch’ for regional SMEs; function as catalyst</td>
</tr>
<tr>
<td>Variations</td>
<td>1. large urban technopoles (France, Japan) 2. Science parks (university-linked/ stand-alone) (US, UK, etc) 3. incubator centres (UK, Germany, ….)</td>
<td>European network of Innovation centres (often with property development) national networks of advisory centres (Denmark, Netherlands) regional networks (Steinbeis, ICT Catalonia) stand-alone centres</td>
<td>Prototype: Real Service Centres in Emilia Romagna Close follower: IMPIVA network in Valencia Small follower: North Tyneside Real Service Centre (North East of England)</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Some university-linked science parks are highly successful; many technopoles fail to create internal linkages and often remain elitist enclaves in regional economy</td>
<td>generally successful in quantitative terms (number of firms reached etc) but genuine contribution to technology transfer and innovation difficult to assess remain highly subsidy dependent</td>
<td>offering more specialised and tailored services higher levels of self-financing targeting dilemma</td>
</tr>
</tbody>
</table>

Source: Lagendijk & Charles, 1998
bottom-up ‘institution building’ and a more strategic role of industry associations.

**SMEs vs. large firms**

Even when SMEs are successfully engaged, the question remains as to what extent network-based strategies should be focused exclusively on SMEs. One of the objectives of the Danish networking programme, for instance, was to raise the competitiveness of SMEs versus that of large firms (Huggins, 1996). This objective was justified with the perception that the Danish economy is dominated by SMEs, and that many sectors are threatened by competition from large firms outside Denmark. In many other cases, however, such an exclusive focus of SMEs may be called into question. From an academic perspective, various authors have pointed at the large variety in successful institutional structures underpinning competitiveness, opposing the bifurcation in regional development models into a small firm and large firm variant (Dicken & Thrift, 1992; Langlois & Robertson, 1995). In the context of business support, SME support has been linked to initiatives geared to the development of supply chains around large firms. Even when no commercial links were at stake, large firms have also been employed as mentors for SME development. From a political perspective the exclusive focus on SMEs may also reflect an opposition by local leaders to an ‘invasion’ and growing dominance of foreign capital in a region (Bellini, 1998).

It is especially in the area of linking inward investment and SMEs that the concept of ‘clusters’ has been influential. The idea that clusters can foster links between different segments of a local economy has appealed to regions with a strong tradition in attracting foreign investors. While such ‘exogenous’ strategies have yielded highly positive results in terms of importing growth and jobs, as shown for instance in peripheral UK regions, less attention has been paid to the process of embedding externally owned plants in the local economy. Increasingly the need was seen for fostering inter-firm supplies, creating mechanisms for inter-firm learning, and encouraging the involvement of management of externally owned plants in local industry associations etc. (Young et al., 1994; Lagendijk et al., 1996). Cluster strategies have thus been introduced as a follow-up of investment attraction policies, and as a way to integrating policies especially targeted on SMEs. One example of such integration is when, through the role model and even active mentoring of foreign firms, small firms are better able to identify their needs for improvement and support. This may then translate into strategies of inter-firm learning, as well as a reconsideration of the role and form of other policies in the area of skill development, technology support, marketing etc.

### 3.2.2. Clusters as design and delivery model of business support

Continued disillusion about the effectiveness of business support to SMEs has not only changed the nature of its services but also the nature of the support sector itself. Despite the proliferation of initiatives, the variation in the organisation and financing of support, and accumulation of knowledge
stemming from research and evaluation, the effectiveness of most business support is still called into question. Various authors have pointed at a continuous mismatch between the providers and clients of business support. What has incurred much criticism is standard, non-customised nature of much support, the lack of sophistication and credibility among providers, the emphasis on ‘quick fixes’, the bias towards technical solutions rather than towards addressing organisational and managerial deficits, and the risk-averse attitudes of most service providers (Morgan, 1996; Shapira et al., 1995; Hutchinson et al., 1996; Burgess, 1997). Even worse, in countries with a long history of support measures, such as the UK and Germany, increasing disillusion with the support sector among SMEs has led to a kind of support fatigue (Hassink, 1996). Increasingly, support agencies were facing the fact that somehow they had to sell their service, not in the sense of commercial sales but merely finding clients showing at least initial interest in their services. Responding to such persistent failures, various governments have undertaken the first steps towards reshaping and even rationalisation of the business support sector (which happened recently in the case of the Dutch Business Innovation Centres).

A history of ineffective business support

Why has it been so difficult to increase the effectiveness of business support? An important factor has been the initial organisation of the support sector and the kind of philosophy employed. The provision of support started with a strong emphasis on technology transfer and demonstration, following a ‘technology push’ model. These support measures suffered from two handicaps: a lack of understanding of SMEs as business organisations and a lack of proper demand identification.

The first handicap can be attributed to a general lack of insight into the organisational and management capacities of SMEs and the problems they may face in adapting to the requirements of new technology. While the innovation deficit was acknowledged, the specific behavioural context of SMEs tended to be overlooked (OECD, 1993; Monck et al., 1988). The idea thus emerged that technology transfer should be part of an integral strategy of business modernisation, which includes management, organisational change, skills upgrading etc. The first initiatives which tried to follow such an approach involved the deployment of innovation consultants in programmes such as the UK Enterprise Consultancy Initiative, the French Aides au Projet d’Innovation and the German Unternehmensberatungen für KMU. While these initiatives took a more managerial view of the innovation process, they failed to tailor support to the organisation of the SME, and they tended not to offer much more than ‘quick fixes’ (Burgess, 1997). In particular, these initiatives continued to be grafted on ‘large firm’ models and strategies.

A specific problem with the technology-led approaches was that they failed to give small firms a sense of direction. Rather than focusing on business development as the bottom-line of support provision, each agency narrowly focused on its own specific mission: technology transfer, skill
development, innovation support etc. Whereas large firms have the capacities to assess their market position, to develop a growth strategy and accommodate their innovation strategy accordingly, SMEs often lack such strategic capabilities. A key problem with SMEs is that they are not able to articulate what their needs are for long-term survival and growth (Brusco, 1992), although they may be able to express some immediate wants. Without a strategic concept of business development, the inclination to see technology and innovation as universal solutions to the problems of SMEs may even be harmful:

“Innovation, broadly perceived, is not the sole preserve of successful, growing firms. Not is it necessarily good in itself. It can either open doors into new areas of the market-place or help firms to lock themselves in. It can be linked with an outward-looking, diversifying approach to market development, but it can also represent the struggles of firms to keep alive an enclosed and shrinking market. In the latter case, it can be argued that innovation merely stretches the period of decline and the market adaptation which is required. (...) What matters is not so much innovation itself, but where it leads. Unless these small firms can connect their innovative efforts to wider markets beyond their depressed region, or to new technology, these efforts may lead nowhere” (White et al., 1988 p.108/9)

In a more general context, some serious claims have been made that Europe, apart from clinging on to a technology-push approach, suffers from a ‘productivity cult’ while it lacks a strategic approach to innovation (European Commission, 1995). The ‘productivity cult’ referred to the fact that much energy appeared to have been devoted to improving activities and technologies that, however successful these improvements had turned out to be, were fundamentally obsolete and only applicable in mature markets. What was needed, accordingly, was a support sector with proper diagnostic skills and the provision of ‘economic intelligence’, at the level of both the firm and the wider economy. In terms of the contents of service provision, this meant that there is not only a need for shifting from routine to more specialised services, but also to provide a more organisational and managerial orientation. In the European Green Paper on innovation, the seriousness of the situation was expressed as follows:

(...) one of the weaknesses of European innovation systems is the inadequate level of organisational innovation. This serious shortcoming makes it impossible to renovate models which are now inefficient and which are unfortunately still being applied in a large number of businesses. The same applies to effective innovation-oriented formulae for business management. (European Commission, 1995, p.19)

The poor attention to behavioural and strategic issues not only affected the content of support, but also the way it was delivered. In the case of the subsidised innovation management consultancy, for instance, one of the aims of the initiative was to have a demonstration effect. It was expected that the first confrontation with such services would trigger more interest
and lay the foundation for a commercially viable consultancy sector tailored to SMEs. This expectation was not met at all (Burgess, 1997). The problem was that support agencies and policy-makers seemed to miss a proper understanding of the cognitive and communicative routines of SMEs, and the same could be said of most of the academic approaches (Gertler, 1996). Scott et al. (1996, p.95) found evidence for the communicational gap in their study of UK small and medium sized manufacturing firms (SMMEs):

“even where SMMEs actively identify deficiencies in their in-house technical capabilities, there is often - particularly in owner-managed firms - uncertainty about, or resistance to, outside help. This problem is compounded by a lack of adequate communication channels for the transmission of aid”.

To add to this picture, Curran and Blackburn (1994) observed that owner-managers tended to rely more on ‘word of mouth’ as a source for knowledge about business improvement rather formalised information structures. To reach firms, their communicational routines and patterns should clearly be taken into account.

Problems of lacking integration have been further compounded by the way support has been organised and financed. Over the last decades, the business support sector has shown a strong growth and proliferation. In Europe, programmes have been initiated at three or more spatial levels: local/provincial, regional, Länder (in the case of Germany), states and the Community level. Many highly focused and complex programmes have developed, each with their own rules, regulations and specific funding regimes. In addition, funding was increasingly supplied via rounds of project-based competitive bidding rather than block grants. Support agencies must thus grapple with an increasingly differentiated and competitive funding environment, and cope with an administrative complexity (especially in the case of European programming) which is more than daunting. The need to show results on often short-term scales has also forced the agencies to opt for less risky, i.e. less innovative forms of support. In the words of Bellini (1998, p.24): “Evaluation ‘imposed’ on service providers triggers defensive and instrumental attitudes: complying with formal requirements is often more important than exploitation of the learning potential of the evaluation procedures”.

Towards integral support structures

The need for a more strategically informed and tailored mode of support to SMEs, for improving the communication between service providers and their clients and for organisational and financial streamlining, inspired ideas about moving to more integrated support structures. An integrated approach should go beyond the mere transfer of technology and emphasise the upgrading, or modernisation of the business as a whole, and take account of the specific business culture and management style. In their study on modernisation programmes focused on SMEs, Shapira et al. (1995, p.78) indicate what kind of strategy is most appropriate and how this should be organised:
“From the perspective of a small or midsized customer, modernisation programmes should be ‘seamless’, offering a full range of expertise and resources. Modernisation programmes can seek to do this by providing a range of different kinds of expertise or services themselves, or -perhaps more feasibly - developing strong linkages and co-ordination with other service providers.”

Different models have been developed to accommodate the call for improved business support. One development with a strong technological focus has been the development of RTACS (Regional Technology Advisory Centres) (Charles, 1997). Although RTACs appear in many different forms and approaches, the common parameter is that they act as an intermediary organisation between SMEs and technology providers. Their emergence can be seen in the light of the shift towards more demand-led innovation policies for SMEs. Advice on technology transfer thus comes with a package of auditing, diagnosing and support for other areas such as funding and assistance with organisational change. Some RTACs (for instance in certain French and Spanish regions) perform a role as ‘one-stop-shops’, as points of referral to other forms of business support; some even act as strategic co-ordinators within the wider regional network of business support. In this way, RTACs seem to support integration at two levels: at the client level by offering access to an integral support package and at the regional level by improving the integration and supervision of the regional support structure.

The performance of RTACs varies widely. Some have been able to develop services on a more commercial basis but most activities depend on public subsidy. One problem RTACs face is that while having become more demand-led many of their services tend to be highly generic. Once SMEs have embarked on a process of upgrading, their demands quickly shift from generic support to special needs that are more sector-specific. They also shift from overcoming immediate technological and organisational problems to becoming more linked to marketing issues (Devins, 1996). In particular, helping SMEs with finding a sense of long-term direction requires a basis of intelligence gathering, of ‘technology watch’ and ‘marketing watch’. Particularly when firms successfully adopt measures of modernisation and upgrading, they will need more sophisticated, i.e. less generic forms of support. This insight forms the basis for a more sector/cluster-based approach to business support, linked to the idea that, at a regional level, a certain degree of targeting may be pursued. Smallbone’s (1997 p.133) study on SME support gives an illustration of some of the benefits as well as caveats of sectoral differentiation:

“a policy of targeting at the levels of sectors to support growth is not recommended if this means focusing on firms in some sectors to the exclusion of firms in others (...) At the same time, there may be a case for prioritising certain types of activity over others because there are a priori reasons for suggesting there is greater public benefit in terms of contribution to economic development [for instance, if strong market growth is expected] (...) Nevertheless,
some of the support that firms need requires sectoral differentiation and agencies must build up locally relevant expertise, not least to establish a basis of credibility with client firms” (Smallbone, 1997 p.133)

How could such a differentiated approach be organised in practice? While the general parameters of a sector or cluster-based are generally accepted, authorities themselves often lack the knowledge and organisational capabilities to pursue such a policy. Totterdill’s (1995) analysis of the development of local industrial policy in the UK, for instance, concludes: The “relative sophistication of sectoral strategies, needing specialising knowledge and vocabulary, presents a real obstacle for many local authorities”. A key problem is thus a quality mismatch between much service provision and business needs (North et al., 1997).

Rather than following a conventional support model, sector and cluster-based approaches for SME support are interpreted along associational lines (Devins, 1996). The role of the government thus becomes one of facilitating and part-financing the set-up of specific knowledge-oriented service centres, often in collaboration with other organisations such as Chambers of Commerce and business associations. According to the European Commission, however, such associational trends are still hard to find.

“Determined collection, sharing (co-operation between firms, pooling of resources with public authorities) and protection of strategic information are still too rare in Europe. Social and professional divides, fear of competition and deliberate secrecy make collaboration between firms and authorities a difficult matter. Individual and collective attitudes therefore need to change if economic intelligence is to gain a foothold” (European Commission, 1995, p. 30)

A model of ‘economic intelligence’ provision: the Real Service Centres

A prime example of an approach fitting the sector-oriented intelligence model is offered by the so-called ‘real service centres’ in Emilia Romagna, established under the supervision of the regional development agency ERVET. The ERVET network consists of eight sectoral and theme-oriented centres. Their core objective is to disseminate information in the areas of market development, marketing and technology, tailored to their client group. The idea of ‘real’ services does not reflect an opposition to ‘financial’, but reflects the strategic and structural nature of the service provision, and a strong orientation towards the development of business capabilities in a network context. The centres play a strong role in the creation of economic ‘intelligence’ through the work of industry experts and the maintenance of databases and libraries.

A key issue concerning the management of technology is the role of the centres as ‘catalyst’ and as identifier of strategic needs. The latter is illustrated by the evaluation by Rush et al (1996, p.167) of CITER, the textiles centre state: “[CITER] develops its specialism in relation to the strategic needs of the sector, and only through working with the firms in
the sector it is able to identify which of the generic functions to develop”.
They authors add to this: “This does not mean that CITER merely reflect
what its members want. They have always been in the business of
pioneering new services - of the need for which their members may not be
fully aware. It was one of the early principles of the Centre that the
services provided should arise out of a process of strategic research and
discussion, not simply a poll of prospective members” (171). The success
of CITER is attributed to the quality of the leadership, which has been
very strong in ‘animating’ the industry, and successful in building links
with external sponsors and other bodies, and the fact that the centre itself
originated from business consortia. Finally, while they are part-funded by
local government and organisations such as Chambers of Commerce and
business associations, most real service centres secure more than half of
their revenue from their client contributions and fees.

While Italian real service centres may be considered the apex of cluster-
based support in an associational setting, with Emilia-Romagna as the
paradigmatic example, other configurations are also possible. One such
example is offered by the Basque Country, where the cluster approach
primarily served to institutionalise the demand side for local technology
support, while the supply side is embodied in the local technology
network. In other regions, examples of sector-specific RTACs can be
distinguished which have developed a more proactive role in sector and
cluster development (Charles, 1996). Recent years have seen a strong
interest in all forms of service centres and cluster-oriented technology
centres.
Table 8 Constitutive analytical dimensions of clusters

<table>
<thead>
<tr>
<th>dimension</th>
<th>description</th>
<th>examples</th>
<th>supported policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>geographical</td>
<td>spatial clustering varying from ‘local’ to from ‘industrial districts’ to world spanning clusters such as aerospace regional cluster mapping linked to SME support; supporting of global nodes (e.g. technopoles)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>horizontal</td>
<td>relationships between different industries/sectors (Porterian clusters) Dutch ‘mega clusters’ with specific innovation styles ‘cross-industry’ innovation policy</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>vertical</td>
<td>joining sequential phases in the production process value chains, filières, supply chains supply chain initiatives</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>lateral</td>
<td>sharing a diverse set of capabilities underpinning economies of scope multi-media clusters; ICT clusters integrated industrial policy focused on emergent cluster</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>technological</td>
<td>sharing common basic and evolving technology bio-technology cluster cluster-differentiated technology policy (innovation and learning)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>focal</td>
<td>hub-and-spoke model around a central actor business network around a core assembler, university, research centre supply-based ‘after-care’ inward investment policies</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>quality of the network</td>
<td>emphasising the social interaction between actors, and to what extent this underpins progressive, innovation oriented behaviour progressive versus regressive networks network and ‘institution building’ oriented policies</td>
<td></td>
</tr>
</tbody>
</table>

Source. Column 1 and 2 based on: Jacobs, 1997
3.3. **Step six: towards a typology of cluster policies**

“In this way the different possible cluster dimensions can be seen as a menu, out of which these business strategists and public policy-makers can choose, according to the specific situation they are confronted with.” (Jacobs, 1997, p.24)

The previous three sections have highlighted three areas in which the cluster concepts has been influential, but which have also led to further modifications and variations of the cluster concept. As a way of synthesis, two readings of the evolution of the cluster concept are possible. The first reading is that clusters, through the way they have been associated with very different models and levels of industrial development now can be seen best as a menu of policy options. The second reading is that the cluster concept has gone through a set of stages, and although in practice policy continued to be based on lessons from all stages, this upholds somehow the idea of a ‘nucleus’ cluster concept with high degree of variation in practical applications. As will be shown in this section, the latter reading may form the basis of a cluster typology.

3.3.1. **What’s on the cluster menu?**

The idea that clusters can best be seen in a pragmatic context has been promoted by a group of Dutch writers on clusters (Jacobs & De Man, 1995; Roelandt et al., 1997). By considering the diversity in approaches and aspirations in cluster concepts as a benefit rather than a weakness, this has inspired the idea of a ‘menu’ perspective. In Jacobs’ summary of cluster approaches in industrial and innovation policy, he distinguishes between seven dimensions of clusters (see Table 8), which form the basis for a variety of cluster strategies and policies:

“In this way the different possible cluster dimensions can be seen as a menu, out of which these business strategists and public policy-makers can choose, according to the specific situation they are confronted with (...). By making the dimensions of clustering explicit, a basis upon which tailor made strategies and policies can be developed has been provided” (Jacobs, 1997, p.24)

Table 8 also gives an indication of what kind of policies and initiatives may be developed on the basis of the menu. What is essential is that policies and initiatives will generally draw upon various dimensions. Typical cluster initiatives could be, for example, regional supply chain initiatives targeted on supporting SMEs which are (potential) suppliers to a hub firm, a national innovation policy which focuses on supporting cross-cluster interaction around an emergent technology, or an ‘institution building’ and networking oriented policy which aims at improving the interaction between firms in a certain sector and the wider knowledge infrastructure. This approach chimes with Storper and Scott’s (1995) observation that industrial policies are increasingly developed within the ambit of heterodox policy frameworks, which are strongly context-sensitive, oriented toward
production systems and aimed at the ongoing adjustment of productive and innovative capacities.

A menu approach is one way to cope with the fact that the concept of clusters itself has become a cluster of concepts and approaches, which has been linked, as shown in previous steps, to vary different agendas and policy interests. Table 8 shows the main categories of the cluster typology as developed by Jacobs; some references to SME policies, inward investment policy, technology policy, and industrial policy have been added as examples in column four. One may question, however, whether a menu approach does not lead to a too disparate and fragmented understanding and application of clustering. Against the background of an increasingly heterodox, strategic and dynamic environment of policy making, one of the core demands of policy-makers is the development and understanding of integrative concepts and guidelines. A menu, as every regular restaurant guest will know, might not be very helpful in this respect. While, at first glance, a menu may pretend to provide an overview as well as a toolkit for cluster initiatives, it may well obscure rather than clarify the critical issues surrounding the approach.

3.3.2. A hub-and spoke concept of clusters?

A major drawback of a menu approach is that it draws the focus away from what may be seen as the major strength of the cluster approach. As epitomised by Porter’s work, clusters facilitate an encompassing view which integrates a bird’s eye view of an economy (cluster maps) with more detailed insight into the specific interaction between and within industries and with the wider economic environment. In doing so, Porter inspired a policy approach which could strike a balance between generic policies which targeted overall framework conditions and specific policies which focused on the shaping of relations within certain industries, although the latter was less emphasised in Porter’s own work. Through falling more in tune with network approaches and concepts of targeting, moreover, cluster approaches could take the middle ground between bottom-up micro approaches aiming at networking in and around small business groups, and top-down approaches geared to securing and adjusting the overall economic structure.

Without having produced common guidelines of how cluster policies are to be pursued (although see Rosenfeld, 1995), the approach somehow appears to offer some answers to problems which had emerged particularly in the field of industrial and technology policies:
• how to shift technology policies from a ‘technology-push’ to a more demand-led, customer-tailored model;
• how to create more integrated forms of industrial policy which go beyond simple ‘technical fixes’;
• how to develop an industrial policy which builds on existing strengths without ‘picking winners’ and which also supports business development in what are seen as promising growth sectors;
• how to overcome the bifurcation of technology and industrial policy into SME and large firm-oriented initiatives; how to address structural economic problems (industries in decline, poor representation of growth sectors), while shifting to more facilitative, business-led initiatives;

• how to embed initiatives which focus on ‘institution building’ and networking in a framework which facilitates both guidance and monitoring by the public sector, avoiding top-down social engineering?

The fact that the cluster concept offers responses to such diverse questions and interests, thus playing into the hands of policy-makers and business support agents, explains why the concept has become so popular and why there are so many different interpretations. So, is there still a core to clusters?

The suggestion for a ‘core’ is the following. Cluster approaches, through invoking recent insight into the relationship between innovation and relational aspects of the economy, and ideas about the role of spatial and sectoral dimensions of economic development, are able to bring together a notion of economic restructuring at the macroeconomic level with concepts of networks, ‘governance’ and systems of knowledge accumulation at the micro/meso level. Restructuring refers here to the notion of (re)shaping the regional specialisation within a relational perspective, that is, with emphasis on the role of linkages between businesses and with the wider regional support infrastructure.

It is this marriage between the structural level, as depicted by appealing cluster maps, and the relational and institutional aspects at the lower level, as captured by the rich vocabulary on networking, associations, governance structures etc, which has made the concept so influential. Within this broad context, more specific definitions have put emphasis on different elements and relations, in different sequences. Jacobs and his colleagues stress the link between innovation and sectoral specificity with a strong orientation to framework conditions, while the spatial dimension is seen as contingent on sectoral specificities. Authors like Rosenfeld and Enright start their cluster conceptualisation from the observation that proximity delivers specific benefits to firms, which is then worked out at a sectoral level. Critical writers have taken a more political view, stressing the need for institutions to ‘pin down’ benefits from sector-specific innovation processes at the local level. This can also be associated with the issue of regional identity (see Figure 1 above).

This study focuses on cluster initiatives as part of regional development policies and the development of business support. Drawing on the discussion in the preceding sections, four broad instrumental interpretations of cluster initiatives can be distinguished:

- framework-oriented policies, which address the broader industrial, institutional and regulatory conditions in which regional clusters operate; this involves a focus on the links between regional and industrial governance at a regional macro level, as well as on the most prominent meso links between regional organisations and businesses;
- institutional approaches, in which the capability development and alignment at the business and cluster levels are emphasised, at a micro-meso level; this focuses in particular on the role of service and knowledge centres and combines a view of clusters-as-target with clusters-as-method of support delivery and technology policy;

- a networking focus, in which the brokering of business clusters, and the joint development of business capabilities within the groups is emphasised;

- a learning orientation: emphasis on learning through facilitated clusters rather learning to cluster - business support, this approach sits between the two above, but is more flexible in the sense that it does not have such a strong objective neither in terms of ‘institution building’ nor group formation. This may involve supply chain or networks built around hub firms for instance as part of after-care policy.

Table 9 Four instrumental cluster perspectives

<table>
<thead>
<tr>
<th></th>
<th>Industrial cluster</th>
<th>Institution-building</th>
<th>Network-building</th>
<th>Learning-oriented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synopsis</td>
<td>Improving cluster-specific framework conditions (‘diamond’)</td>
<td>Cluster-based service centre or association (often member-based)</td>
<td>Business networks (through closed partnerships)</td>
<td>Facilitated exchange networks (through open learning environments)</td>
</tr>
<tr>
<td>Background</td>
<td>Macro and meso-economic differences between countries/regions; innovation systems</td>
<td>Institutional and associational economics; tailoring business support</td>
<td>Instilling collaborative attitudes; building longer term links with support clients</td>
<td>Learning agenda: facilitating inter-firm exchange of experiences</td>
</tr>
<tr>
<td>Clusters-as-target</td>
<td>Facilitating clustering between industries; supporting supply chains and cluster-based ‘innovation systems’</td>
<td>‘Organic’ focus: Linking cluster-based support with development of economics of scale and scope among cluster businesses</td>
<td>Core focus on building business clusters, i.e. joining firms with related but dissimilar capabilities</td>
<td>‘Facilitated clusters’ or focus groups (not intended to endure); initiatives developed around ‘mentor’ firms (e.g. linked to supply chain)</td>
</tr>
<tr>
<td>Clusters-as-method</td>
<td>Integrating policies along cluster lines; supporting cluster-based technology policies</td>
<td>Tailoring services and ‘economic intelligence’; centres may facilitate policy integration</td>
<td>Drawing on cluster-specific knowledge; some degree of support customisation</td>
<td>Mediating between groups of related businesses and support sector</td>
</tr>
<tr>
<td>for business support</td>
<td>national/regional</td>
<td>regional/business</td>
<td>business</td>
<td>business</td>
</tr>
<tr>
<td>orientation</td>
<td>Follow-up from Porter (1990)</td>
<td>Italian RSC regional industrial associations</td>
<td>SME clusters (Tyneside) Knowledge Intensive Clusters (KIS Twente)</td>
<td>SME focus groups</td>
</tr>
</tbody>
</table>
3.4. Step seven: the present debate

“(…) criteria for clusters have proven exceedingly difficult to pin down, and there are as many definitions as there are types of organisations using the term” (Rosenfeld, 1997 p.8)

“It [the cluster concept] stands at the cross-roads between regional action, industrial and labour market policy, education and research policy, urbanism and town planning, and perhaps also opinion forming and political leadership - no mans land astride the conventional organisation of administration and public life” (1997, p. 16)

How useful is the cluster approach for supporting SME development at a regional level? The previous sections have introduced various significant images and associations linked to cluster approach. This included the link with innovation, the salience of the region as an economic and political site, the associative approach in business support, the role of networking in SME development. The discussion has also revealed however that there is no consensus about the more detailed analytical value and applicability of the cluster concept. In the words of Rosenfeld (1997, p8) it has proven exceedingly difficult to ‘pin down’ the details and criteria for cluster developments. Unresolved issues abound. For policy-making, the concept can thus be interpreted as a menu of opportunities, or as label for the common denominator within a collection of related, but still diverse ideas on regional economic development, by inducing communication, and interaction between different domains and underpinning more integral forms of regional policy. Fuzziness is thus also a consequence of the fact that the cluster concept lacks its own organisational domain. It acts, to reiterate Steiner’s (1997, p. 16) words, in a kind of “no man’s land”, in which the analytical and policy dimensions are often blurred.

Should one aim for a more coherent and less disparate concept? Given its heterogeneous background, the answer should perhaps be no. Indeed, as argued before, the concept derives much of its popularity and impact from its capacity to integrate, in an associative and discursive manner, various prominent ideas in current thinking on economic development. The fuzzy nature allows the concept to move between different domains - various scientific disciplines, various strands of policy making and business support, consultancies, etc. - facilitating inter-domain communication and joint action. In this way, clusters play the role of a ‘boundary object’ underpinning the translation of ideas between different communities (Fujimura, 1992).

On the other hand, one may argue that not all aspects of fuzziness are worthwhile. While fuzziness is partly the result of its inter-disciplinary character, it also stems from insufficient articulation of basic definitions and viewpoints. It is a frustrating experience for both practitioners and researchers that much time in sessions on clusters has to be devoted to the very basic question of ‘what are clusters?’. While no simple, uniform answers are possible for complex issues of spatial-economic development,
and while many issues will remain controversial, there is scope for providing more clarity and structuring the debate. This should allow researchers and practitioners to take the discussion a step further and build a common platform for the exchange of ideas and experiences.

This chapter has introduced many unresolved issues that may benefit from a more structured discussion. Six issues will be further discussed here, covering a range of themes that will be addressed in the following chapters.

3.4.1. Networks within clusters; clusters within networks?

One theme that has actually seen increased confusion is the definition of clusters compared with the concept of networks, particularly in policy applications. Initially clusters were closely associated with sectors and industries. Networks, as far as they played a role, were seen as part of clusters, underpinning the relational character of clusters and their competitiveness. More recent literature features the role of co-operative networks as part of cluster development (Jacobs, 1997). Rosenfeld (1997) makes a distinction between clusters, which derive their strength from collective visions and the shaping of social values, and networks, which, as ‘closed’ organisational configuration, develop on the basis of common business goals and agreed collaboration. Clusters, in this interpretation, have ‘open’ membership, involve both collaboration and competition.

However, another trend is the shift in the conceptualisation of clusters from the industrial level to the micro/meso level. The final outcome of this evolution is the definition of clusters as closed groups of proximate firms with similar or related businesses that raise their competitiveness through collaboration. This approach has been adopted by local business organisations that target SMEs. Now the relationship between clusters and networks is reversed. Clusters are nodes of closed business groups taking positions in wider networks. As will be shown below in the presentation of business clusters, this scale jump is still justified on similar grounds to the industrial clusters: synergy resulting from linking complementary activities, the role of proximity, the notion of competitiveness, and the emphasis on industrial dynamics and innovation. Moreover, the previous section has introduced other notions of clustering, related to institution building and learning, in which the relationship between clusters and networks becomes more complex.

The use of clusters at the more localised, micro level poses a fundamental dilemma for the definition of the concept. One way out of the dilemma is to make definitions only for more precise concepts (industrial clusters, business clusters), similar to what seems to be the case with the very open concept of 'networks'. The question of how networks relate to clusters may then be answered for couple of more specific definitions of 'clusters' and 'networks'.
3.4.2. Learning to cluster, learning through clusters?

With an increased orientation towards networking and learning, and the move to more localised, facilitated clusters, another issue emerges. What is the purpose of clustering? And how should the success of clustering be assessed? The discussion identified two typical views. On the one hand, clusters can be regarded as the aim of an initiative, in line with the notion of 'institution building'. The endurance of a cluster formation then becomes a crucial issue. Endurance is interpreted as proof of the competitive success of the cluster. Moreover, survival of the institutional manifestation of clustering - such as a real service centre - offers scope for a sustainable provision of 'economic intelligence' and joint lobbying capacity of the represented business activities. On the other hand, clustering is seen more as a means to an end, as a way to facilitate the exchange of ideas and a culture of learning. Clustering is then interpreted more in social than institutional terms. The vital residual is not a certain institutional configuration, but the stock of 'social capital' accumulated in the process. Particular manifestations of clusters and institutional configurations may play an essential role in the build-up and use of social capital, but their endurance is not fundamental.

While they clearly reflect different points of emphasis, these two views should not be seen too much in contrary terms. In general, institutional and social developments present two related dimensions of processes through which economic capabilities and interaction are improved. What this discussion points at though is the need to be clear about the means and ends of cluster initiatives. In particular, a sensitive issue in the context of policy-making is the endurance of clusters. An endurance condition is attractive for policy-makers because of its simplicity in application and its persuasive nature. The problem however is that survival becomes a dominating factor in policy implementation, while the real objectives (raising innovative potential through facilitating collaboration) are side-tracked. The inclination to secure survival may easily evoke a strategy of supporting survivors, that is, of 'picking winners'. While 'winners' may, and often should play an essential role in cluster initiatives, as hubs, tutors, etc., the right balance between such actors and weaker organisations should be established. Like 'clustering', winners should be more part of the means than the ends.

“Competition reflects the idea that government should identify general priorities but not pick winners; cost sharing is based on the notion that if an idea is sufficiently good, proposes should be willing to sacrifice their own resources for it.” (Storper, 1995a, p.905)

This issue will be further explored in the next chapter.

3.4.3. Commercial versus non-commercial linkages?

While the exchange of tacit knowledge and other untraded factors have become catchwords in the debate on inter-organisational relationships, the role of commercial relationships (as measured by input-output tables) cannot be ignored. One reason for focusing on both is the importance of
commercial relationships in facilitating other forms of exchange. As argued before, this applies especially to SMEs, which tend to rely heavily on their 'active network'. The work of Lundvall on innovation (Lundvall, 1996) and Porter on value chains has vindicated the same process with other firms, notably in the context of supply chains. Another reason is that commercial relationships, particularly supply chains, provide an attractive starting point for policy initiatives. Especially in peripheral regions, commercial links, often with emphasis on material links, have provided the main focus for clustering and networking initiatives. Reaching higher levels of local integration of productive links ('local content') is often a major objective of regional policy (at least implicitly).

While commercial relationships may thus provide a substantial contribution to improving regional interaction between firms, there is also an important caveat. Too much focus on productive linkages can lead to an ignorance of less tangible goals, such as improving the exchange of knowledge, cultural change and institutional developments. Even worse, it can have an adverse effect when it makes local firms too dependent on local markets. Business failure or withdrawal, especially of larger 'hub' firms, may then cause serious knock-on effects. In the view of Andersen (1992, p.70), high rates of input-output relationships are not necessarily a reflection of dynamic growth centres: The tight linking of industries revealed by the input-output tables of the most advanced countries has no connection to growth poles. (...) it probably indicate a 'mature' situation with routine deliveries and few possibilities of change and development”

What may be potentially highly risky is a strong emphasis on filling 'missing links' as part of clustering. The ambition to create 'complete' clusters often tends to be supported by a strong orientation towards specific 'hub' firms such as final producers and their supply links. Apart from the practical problem of how 'missing links' are assessed in a complex value chain, the global nature of many intermediate markets is easily overlooked. Moreover, even when captured locally, many supply links will hardly contribute to improving regional innovative capabilities or change business behaviour.

3.4.4. Existing versus new strengths? Issues of selection, targeting and facilitating

The latter dilemma points at an issue already raised several times, but which is of such importance that it is reiterated here: that of targeting. Can clustering be used to nurture new activities and induce a change of the regional economic profile? The discussion before already presented the strong doubts expressed particularly by academic observers. Nelson, in his conclusion on national innovation systems, reiterates that clusters can never be created from scratch (Nelson, 1993). Also Jacobs’ comments, despite his open ‘menu’ approach to clustering, fall in line with this critical stance:

“The point of departure for cluster-based policy is the existing strength in an economy (...) The scope for starting a new cluster is,
however, restricted: the costs are very high and the chances of success limited” (Jacobs, 1997 p.23).

The message is to avoid ‘wish-driven’ policies, not to embark on fantasies, but to facilitate processes of which the seeds are already sown. Likewise, Storper (1995a, p. 907) argues that technology policy should nourish firms already showing existing and potential synergies: “(...) the task of a technology policy would be to encourage these groups to transform their natural interests in acting collectively into reality, by providing then incentives to forms synergy-based technological coalitions for high risk development activities”. He then goes on to assert that the region is a highly appropriate level for such interventions: “Regions (...) do have certain pressures for the formation of encompassing or wide coalitions” (p.907).

The academic arguments are simple and convincing. Governments should not try to sow and nurture seeds themselves. Put more strongly, every region to its trade. For policy makers, especially those in weaker regions, this does not solve the issue. Many regions face Steiner’s dilemma: they are not doing anything special, and may thus face strong competition across the board. What is especially enticing is the notion that emerging sectors (multimedia, micro-electronics, theme parks) may temporarily provide ‘windows of opportunities’ that will close once a sector becomes established (and clustered) in a certain area. Particularly for regions without an obvious strength, or with strengths only in declining sectors, the temptation to grasp such alleged opportunities are often irresistible. How could one “miss the boat” by not having tried? There is a need accordingly, for a more sophisticated approach to targeting, based on detailed insight on how new activities emerge and where they offer scope for facilitation and nurturing.

3.4.5. Business interest versus regional interests

Much of the literature on regional development policy and business support stresses the point that interventions should be tailored to business interests. Obviously, there is some truth in this. It is pointless to provide support that is not appreciated by its target group. The section on SMEs has revealed how insights on this point have changed the organisation and focus of business support.

However, tailoring does not imply that support should simply serve business interests. What is good for a firm is not necessarily good for a region. The crucial variable is the way a firm is embedded in the regional economy. If the benefits to a firm accrue to the wider regional economy, through local business expansion, and commercial and non-commercial linkage, this may strengthen local economic development. If local benefits are minimal, and business expansion takes place elsewhere, regional interests are served less. In a more proactive approach, as hinted at in the section on associational approaches above, embedding may involve a strong commitment of firms to the local community. Regional interests are
then not only a part of policy formulation, but also inform business strategies.

Defining regional interests, and aligning business interests to it, however, are far from easy tasks. Policy-makers and business support staff need to find the right balance between offering attractive services to firms and aligning their developments with appropriate regional development objectives. In essence, this requires a strategic coaching of local firms. Cluster strategies offer an opportunity for coaching since they provide the basis for the embedding of business development in local economic and institutional networks. By creating specific assets, anchored to the regional economy while serving the needs of particular groups of related firms, cluster developments may thus bridge business and regional interests.

3.4.6. Competition vs. collaboration?

The emphasis on networking and embedding introduces another major issue in the clustering debate: the role of competition versus that of collaboration. The history of the cluster concept has shown a shift in emphasis from competition as part of the framework conditions, to collaboration as part of the network- and institution-oriented approaches. Recent literature has further explored the ‘co-operation versus competition’ quandary. Rather than adhering to a simple opposition between competition and co-operation, new ideas have emerged which stress the social embedding of inter-firm interaction, and the fact that co-operation and competition can co-exist even within one relationship or network (Lorenz, 1992; Enright, 1994a). The essential factors are the ‘rules of the game’, or the norms and values that define the areas and methods of competition and co-operation. Such rules define for instance the nature of commitment of firms to each other, how the costs and rewards for collective actions are distributed, and how sanctions are imposed on firms which do not comply with the rules agreed. Developing, and controlling, the rules of the game is seen as an essential dimension of network formation, and is an important outcome of the governance of the network. The question of the extent to which rivalry is part of the rules of the game remains a critical issue. On the one hand, authors such as Boekholt et al (1993) recommend “to have dynamic networks in which firms co-operate in rivalry”. Networks or clusters should not represent ‘safe havens’ but ‘stepping stones’ to improve competitiveness. Also Enright, in his work on regional clusters, suggested that rivalry should permeate clusters (Enright, 1994b). In similar vein, Storper relates the concept of competition to that of supporting ‘winners’:

“Competition reflects the idea that government should identify general priorities but not pick winners; cost sharing is based on the notion that if an idea is sufficiently good, proposers should be willing to sacrifice their own resources for it.” (Storper, 1995a, p. 905).

On the other hand, collaboration appears to be the catchword in much of the literature of regional development. Particularly in the discussion on
regional ‘competitiveness’, competition is generally perceived as an ‘external’ factor, as something encroaching upon regional economies rather than being part of it. How far ‘rivalry’ should be policy objective at the regional level remains a tricky issue.

3.4.7. Local - global nexus: scale divisions of labour

Behind many of the issues presented so far, and particularly the previous one (competition versus co-operation), lies one fundamental perspective: the local-global nexus. As stressed throughout this chapter, the renewed interest in the region has revolved around one dominant image. Through internal dynamics, sustained by clustering, regions acquire a competitive position in the global economy, broadly denoted as its ‘competitiveness’. Regional action is thus defined largely in terms of influencing this competitive position, as a response to perceived growth and changing nature of competitive pressure, to ‘opportunities’ and ‘threats’ etc. The regional level, and more specifically the level of regional clusters, thus becomes the basic frame of reference for economic action and policy intervention. To sustain this view, various authors have played down the role of international firms, arguing that, for innovative activities, they behave largely like regional firms (Malmberg & Maskell, 1997). The picture thus emerges of a global mosaic of regional economies, specialising through clustering and competing against each other.

There are various authors who have developed more sophisticated accounts of the local-global nexus, for instance by invoking more articulated views of globalisation and inter-regional interaction (e.g. Storper, 1997b; Scott, A.J., 1998). These authors and others (e.g. Jacobs, 1997) also concede that while some economic activities show pervasive regional clustering, others are strongly integrated at national or international levels (for instance much of aerospace, automotive, micro-electronic, certain professional services). Much of the literature, however, especially those on regional innovation systems and clustering, tends to reify the regional level. Much is made of intra-regional interaction and dynamics, while external linkages receive scant attention.

The point made here is that ‘local’ and ‘global’ should not be seen as substitutes, but as interwoven dimensions of industrial dynamics and learning processes. This requires a more subtle approach to understanding how ‘the region’ is positioned in ‘the global’, with as much attention given to the role of and variety in external linkages as for internal linkages. In particular, what needs to be clarified is to what extent regional action should be seen from an economic or a political perspective. While the first is based on the notion of changing industrial dynamics, through an alleged growing importance of proximity, the second refers to political ambition of embedding and anchoring, of ‘pinning down’ the global into a regional institutional setting, to use the image of Amin and Thrift (Amin & Thrift, 1993). In such a perspective, ‘regional competitiveness’ becomes more a concept of political mobilisation than of economic assessment. The case
studies below will shed more light on the intricate interaction between the economic and political level.
Chapter Four. Clusters in practice: from initiation to evaluation

Over the last decade, regional authorities in many parts of the word have implemented some kind of cluster policies. These initiatives draw on different aspects of the clustering debate, have been developed in different contexts and at different levels (local, regional, national), and thus vary widely in scope and depth of objectives and instruments. Nevertheless, by focusing on the common elements in cluster approaches identified so far, an attempt may be made to create of a common analytical framework to study policy initiatives. Building such a framework is the task of the present chapter. Drawing largely on the discussion and issues presented before, a set of themes and questions will be brought together which, in broad lines, reflect the development of cluster initiatives from initiation to evaluation. At the end of the chapter, a summary of the core themes and questions will be presented, which forms the backbone of the empirical studies to follow.

The building of the analytical framework is divided here into three blocks. The first block covers the main themes describing the steps from initiation to evaluation, based on a modified version of the policy cycle. The second and third blocks are based on the distinction made in the previous chapter between business and regional interests. The second block takes the perspective of the businesses involved as its starting point, looking at expectations and outcomes from their side. The third block expands on the regional perspective. The aim is, by comparing these two dimensions, to clarify two core issues.

- first, the extent to which, in the view of firms, cluster policies manage to be business-oriented, and to what extent cluster initiatives increase businesses commitment to regional development;
- second, the extent to which regional policy makers have managed to attune cluster policies to regional interests.

4.1. From initiation to evaluation: the ‘cluster’ policy cycle

This first section follows the idea of a ‘policy cycle’, from conception, decision making through to implementation. While the policy cycle is used to set out the development of cluster initiatives in a historical perspective, the cycle categories have been modified to accommodate the insights developed in the previous sections. This includes an emphasis on the institutional and knowledge dimensions, and specific cluster issues, such as the role of audits.
From conception to design: the role of the institutional and economic context

Why do cluster policies emerge in a certain country and region? How have, concepts and approaches of clusters been disseminated in the world of policy-making and business support? Some of the major context factors behind this process have been introduced in the previous chapter: the shift from intervention to facilitation, an increased emphasis on networking and partnerships, as well as on innovation and competitiveness, issues which have been associated with the cluster perspective, and funding conditions (Lagendijk & Cornford, 2000). There is one additional factor that should be raised here, which is particularly relevant to the regions under study. Cluster initiatives have particularly gained popularity in regions facing problems of industrial decline and restructuring. These are neither core nor peripheral regions, but regions in between, which have enjoyed prosperity on the basis of industrial specialisation in the past, but which feel the need to build new strengths.

One reason why clusters have been embraced in older industrial areas, apart from the general issue of restructuring, can be found in what are seen as the causes of lack of industrial viability. Researchers as well as support agencies have pointed out that these regions are mostly not endowed with a strong tradition in networking, collaboration and ‘institution building’, that they are locked in old patterns of behaviour (Grabher, 1991). They often tend to suffer from strong competition in more traditional or even declining sectors. The double message of clustering - restructuring at the macro-level, networking and ‘institution building’ at the meso level, thus presents an appealing approach for reshaping industrial policy and business support. Nearly all cluster initiatives in this study have been developed against such a background.

The present study will focus on the actual translation of ideas and enabling factors into initiatives ‘on the ground’. An attempt will made to link this practical translation to the broader picture set out in the previous chapter. This can only be done in a cursory way, however. A full account of how
innovative policy initiatives are conceived would require a more in-depth historical review. Since this study aims at exploring the later stages of the policy cycle in more detail (impact on businesses and regions), such a project is not part of the research.

A question that needs to be addressed in the first stage is that of the policy instruments adopted (Table 8). In the practical context of policy-making, the articulation of goals and ends generally go hand-in-hand (Peter & Van Nispen, 1998). In most cases, this choice will reflect the source of inspiration, funding conditions, institutional conditions and the political culture of the policy arena in which initiatives develop. Initial choices may be partly made in an implicit way, which only become more transparent when explicit objectives are set and methods are developed. Indeed, in practice, initiatives may present complex, and often hidden, combinations of approaches and philosophies that may change over time. Rather than finding an explicit statement, it is thus the task of the researcher to ‘discover’ the underlying approach while analysing the policy cycle.

4.1.2. Role of support agencies and funding regimes

Once a general idea has been obtained about how regional actors became interested in cluster initiatives, a more specific question is how the development of cluster policies and initiatives has been structured among policy-makers, business support agencies and business representatives. Who are the key actors: regional governments, regional development agencies, business support agencies, business figureheads? Are they part of larger programmes either at the regional or (inter)national level. What is the division of labour while the initiative is developed and implemented? To understand the specific development of a project, some knowledge about the individual agendas and interests of the support agencies can be useful, against the background of wider shifts occurring in the arena of regional development and business support (partnerships, policy integration etc.). (this will be addressed in more detail in the section on policy-makers’ expectations below).

One area where interests play a dominant role, and where one may find significant differences within the public sector, is that of funding. So far, no distinction has been made between the level of policy-making and support agencies, but this becomes essential once the role of funding in the shaping of support initiatives and even policy development is discussed. While it may be in the interest of governments to control, even reduce, subsidies to business support, support agencies largely depend on subsidies for their existence. Many agencies have tried to raise income by moving towards more commercial approaches to service provision, but generally private sector contributions have remained low. Combined with the fact that many subsidies are provided on a project basis, this has led to an uneasy situation in which government felt obliged to continue funding agencies longer and at higher levels than intended. Policy-makers thus have to strike the right balance between issues of agency survival in the
short term and addressing the needs of the local economy in the long term (Smallbone, 1997).

One way in which agencies in the EU have managed to secure income is by drawing on European funding, often with the help (and financial leverage) of local and national governments. Particularly for European programmes, applications for funding require the formation of partnerships in which various public and (semi)private organisations participate, bringing in different resources and competencies, sometimes in cross-border networks. This has led to even more complex organisational and financial structures, and to a situation in which agencies have been pushed to develop capabilities in the area of funds acquisition, project management and the co-ordination of networks and partnerships, sometimes at the expense of further developing support capabilities. As illustrated by job adverts, it is not uncommon for agencies to look for a ‘European officer with knowledge of and experience in the acquisition of European funding and co-ordination of European programmes’, even with a reference to the specific programmes involved (ERDF, ADAPT, ESF, etc.). One of the ironies, one could argue, is that here in many cases it has been more the funding regime than the ‘associational’ ideas which induced a process of ‘institution building’ and partnership formation.

Funding conditions will place specific limits on what can be financed and how. In many cases, subsidy only pays for the process of analysis, negotiation, brokerage and facilitation. Participants may be asked to contribute to the costs, either because matched funding is required, or because this is seen as a way to secure commitment. The funding may limit the themes on which clustering can be based. For instance, European funding generally does not permit support to export or marketing within the Community. Funding will often be spatially limited, thus hampering the building of links with agents outside the region.

Several issues can be distilled from the debate about the role of funding with respect to cluster policies. The overarching theme is how policies are conditioned and shaped by the particular funding regime from which they emerge. The insistence on partnerships and the prospect of stronger interaction with the private sector (including financial) has been an important factor in the popularity of cluster approaches. The question is what kind of expectations has this raised among policy-makers and business support agencies and what kind of organisational and financial framework has developed.

### 4.1.3. Cluster mapping and audits

Once an initiating body or network has embraced the idea of adopting a cluster approach and secured a first amount of funding, how is a cluster policy planned? At this point, policy-makers are already confronted with the complexity and diversity - and fuzziness - of cluster approaches. Difficult questions are for instance at what level planning should take place, and how ‘top-down’ planning and monitoring will be squared with room for and support to ‘bottom-up’ initiatives. This, in turn, raises the
issues of how the process of cluster targeting is envisaged and what place cluster mapping and auditing will have. A distinction can be made here between conventional and alternative approaches.

Conventional approaches

Grafted onto more traditional policy models, conventional approaches follow a classical sequence of analysis (specifying cluster maps and analysing needs), setting objectives (cluster targeting plus cluster specific goals), designing and implementing cluster-specific projects, accompanied by interim and final evaluations. The analytical phase is a crucial stage that precedes policy implementation. Recent literature has produced a series of advanced methods for carrying out ex-ante cluster analysis. Table 10 presents an overview of key dimensions of cluster analysis, taken from practical guidelines for cluster planning.

Table 10 Cluster auditing

<table>
<thead>
<tr>
<th>Objective of analysis</th>
<th>Possible methods</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determining key sectors and identifying core regional assets</td>
<td>Measuring industry concentration</td>
<td>Cluster maps; cluster investment strategies</td>
</tr>
<tr>
<td></td>
<td>Input-output analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Swot analysis (economic foresight)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Expert interviews/expert panels</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Describing broad value chains; analysis of performance indicators (e.g. Trade)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Survey of social system (institutional mapping)</td>
<td></td>
</tr>
<tr>
<td>Identifying cluster needs and relationships</td>
<td>As above at cluster level</td>
<td>Cluster ‘learning’ strategies</td>
</tr>
<tr>
<td></td>
<td>Cluster-specific surveys analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Focus groups</td>
<td></td>
</tr>
<tr>
<td>Analysis of existing support services and resources by cluster</td>
<td>Building an inventory and a ‘support map’ Agencies survey</td>
<td>Support line up strategies</td>
</tr>
<tr>
<td>Identify social patterns (networking, co-operation, leadership)</td>
<td>Expert interviews Surveys</td>
<td>Association- al strategy</td>
</tr>
</tbody>
</table>

Source: inspired by Rosenfeld, 1995

Undoubtedly, any serious attempt to build a cluster approach requires a process of analysis incorporating most, if not all, of the dimensions included in Table 10. The result of such ‘top down’ cluster mapping and auditing should meet the aspiration of policy-makers to address regional economic problems at a structural level. Rosenfeld (1997) makes a distinction between overachieving clusters which already capture a large part of their clustering benefits, latent clusters which underachieve, and potential clusters in potential growth industries. Other distinctions can be made according to the extent that cluster initiatives are based primarily on inter-firm linkages, in horizontal (co-production) or vertical (supply-chain) dimensions, or on the use and development of collective resources, particularly knowledge centres and the labour market (Held, 1996). Besides the economic analysis, a crucial object of auditing is the support sector itself. Through making an inventory of all the support agencies and services on offer, mapping the position of agencies in the regional support structure, and more in-depth analysis of the competencies developed
within agencies, an idea can be created of how the support sector can be lined up with the cluster approach. Bellini (1998) presents an extensive list of what kind of competencies should be present in service centres. Besides organisational and managerial capacities, these competencies vary from ‘sophisticated marketing’ skills and problem framing skills to the capacity to build links and alliances among businesses, and with sources of financial and non-financial support. Such ‘benchmarks’ can serve for auditing purposes and to develop strategies to improve support provision.

**Alternative approaches**

However sophisticated and well-managed cluster analysis may be, the question remains what role the outcomes will have for further programme design. If a top-down strategy is pursued, the information is expected to be used for to develop a strategy for initiating cluster policies which reflect the cluster map, addressing the problems and needs identified through analysis of the business and support sectors. Planning then includes the ‘nurturing’ of clusters itself. A problem with such a strategy is that it may ignore the value of business actors themselves to instigating cluster developments, as a way to foster commitment and bottom-up support. So, a less conventional approach may be pursued in which the voluntary facilitation of clusters is the main objective, rather than planned ‘nurturing’. Policy should then be geared to developing a framework of cluster support through which cluster initiatives emerge in a bottom up way. Yet, a more facilitative approach will still benefit from a thorough process of analysis. The information gathered through analysis will help to develop the policy framework for cluster facilitation, and for the improvement of support sector competencies. It can also be used for a process of subtle targeting of sectors where policy makers would like to see cluster initiatives to develop, but where ‘associational’ tendencies are lacking. It should be realised however that balancing a top-down framework with facilitating bottom-up initiatives places high demands on programme managers, mediators and support staff. This may perhaps a major reason why, in the end, policy makers may prefer to opt for more conventional approaches.

Two central issues can be derived from this discussion. The first issue is the nature of and methods used for mapping and auditing processes, and the way outcomes are presented and interpreted. The second issue concerns the way analysis is used in the cluster initiative, and how it relates to targeting and facilitation. Moreover, an overarching task is to reflect on the contents and use of analysis in terms of its clarity, thoroughness, and coherence. Not only are there different ways for mapping and auditing, there is also an issue of the actual depth and quality of analysis. Indeed, some authors have argued that some specific cluster policies have failed or underperformed because of poor analysis and preparation. Doeringer (1995), for instance, speaks of 'fuzzy implementation' of clustering approaches, and states that many new policy efforts lack an understanding of the underlying economics of industrial
clustering and a methodology for translating the cluster concept into concrete growth policies tailored to specific business. Held, in his analysis of cluster policy in Hudson Valley, makes a similar comment: "Sadly, in the rush by various governments to employ clusters, some fundamental issues have been slighted, including appropriate research methods and even definition of a cluster itself" (Held, 1996, p.249). While this remains an issue difficult to assess, an attempt will be made to draw lessons from the position and quality of analysis in the different cluster initiatives.

4.1.4. Setting objectives and methods

Because of the wide scope of the cluster approach, a critical issue in cluster initiatives is the formulation of the specific objectives. The previous chapter has indicated that clusters may refer to the aims (cluster building) as well as to the method (cluster-based support) of initiatives. In addition, a broad distinction can be made between an orientation towards competitiveness at a cluster level (of a district, supply chain, or business group) or competitiveness perceived at business level, in which clusters are associated with specific business environments rather than 'competitive units'. However, a deeper understanding of how different cluster approaches should be perceived and put into context has only just started to emerge. In the practical reality of policy-making and business support, actors are trying to make sense of the variation in and complexity of cluster concepts, and even to get a grasp of what is actually happening in the cluster initiatives they have set in motion.

Against this background, one can understand that many initiatives do not go much further than couching their objectives in general terms of 'improving regional competitiveness' and 'overcoming obstacles to networking and co-operation', combined with some notion of targeting. 'Clusters' are often referred to both as a way to achieve this and an outcome of the process. Some authors have pointed at the fact that policy-makers are often tempted to duplicate initiatives which they observe elsewhere, leading to what Storper and Scott (1995) call a proliferation of 'boilerplate approaches'. However, against these accusations it could be said that, certainly in the case of clustering, policy-makers are not helped by the fact that clusters remain a highly elusive concept. Since clusters can refer to both means and end of policy initiatives, it comes as no surprise that means and ends are often conflated. Of course, much will depend on the way projects are prepared, designed and monitored. Where preparatory audits are of high quality and serve for more than justification and legitimisation reasons only, they might help to draw up more specific objectives. A core theme for research, accordingly, is to understand how objectives are framed and set, which role they play in the design and implementation of cluster initiatives, and how they relate to the methods used.

A major reason why the articulation of precise objectives and methods for cluster initiatives is such an elaborate issue is because of the far-fetched ambitions which often accompany this type of policy. This is a not simple
packaged business support, or the provision of new infrastructure. This is policy with the intention to change behaviour and build 'learning' firms and institutions, to shape institutions, to facilitate networking and build a networking culture, to address framework conditions in an integrated way, all this in different permutations. Moreover, most initiatives are expected to become (largely) self-financing, self-managing, and self-assessing. There are thus different kinds of objectives on varying time horizons. While the long term aim may be to instil a networking culture and establish autonomous service centres, the practical goals of the moment may include capability improvement in IT and the facilitation of pioneer business clusters. A more comprehensive cluster programme may thus involve a staged sequence of means and ends: using facilitated learning and 'mentors' to make firms listen to each other, the latter helping to broker business clusters in order to introduce more elaborate forms of networking, followed by an extension of linkages towards knowledge centres, leading perhaps to the establishment of a network of service centres, etc. Much will depend on how views and ideas change through the life of policy approaches, and the flexibility of the initiative and actors involved.

4.1.5. Implementation

At a more practical level, what most cluster initiatives share on the methodological front is the activity of bringing together of different actors and the forging of linkages. To enable this, most initiatives (high-level top-down industrial cluster policies may be an exception) employ mediators, notably brokers and facilitators to implement the project. Their role is crucial (Hassink, 1996): the outcome of initiatives geared towards networking and inter-firm learning, but also service centres and policy integration critically depends on the versatility and quality of these agents (Bellini, 1998). Mediators are the agents who must get the message of clustering across. They are instrumental in the build-up of commitment and trust between the participating firms and organisations. They are often responsible for identifying needs, and linking this to other forms of (external) expertise.

A core question is thus: who selects, trains and monitors the mediators? From which backgrounds should mediators be drawn? Agents from business agencies often lack the expertise and persuasiveness necessary to bring actors together. An often preferred source is the sector in which participating firms operate. A mediator can be a figurehead in an industry, or a retired person, with a good reputation and an in-depth knowledge of the business. This approach is often seen as the most preferred. However, it critically depends on whether the right person can be found. Not every experienced person from within a certain trade will have the necessary capabilities to run a cluster initiative. There may be a need for the training of such mediators. Another possibility is to use professional mediators. While there is a price tag associated to such an approach, it may be easier to manage and control. A problem is that support agencies often underestimate the problems professional mediators have in gaining the
trust and commitment from businesses. Professional consultants may be seen as too glib and too much driven by money, and they may lack the political and social competencies required to work in the context of strategically oriented support provision. After knowing and understanding cluster objectives, finding the right mediators poses one of the most difficult tasks in cluster-type policies that involve networking and collaboration.

4.1.6. Cluster composition

If there is one topic which shows the evolution of the cluster concept, it is the nature of cluster composition. Who had expected that Porter’s interpretation of clustering as a term for the significance of cross-industry linkages would lead to items in business newsletters with headings such as “new firm accepted to the local offshore cluster”. Indeed, cluster composition is an area where highly varying positions can be found among the different cluster approaches. The following point will be taken into account in the cluster analysis:

1. industrial clusters are defined in terms of core linkages between industries, which is often translated in broad groups of activities (as in Porter’s approach). A good example here is the Dutch notion of mega-clusters (Jacobs, 1997), or Enright’s notion of regional clusters (Enright, 1994a);

2. business cluster initiatives lead to closed networks, in which entry and exit is a central management issue; this raises the sensitive issue of inclusion and exclusion;

3. in facilitated micro-clusters, interested businesses can join in to share experiences and learn from peers or a more experienced ‘mentor’; the only restriction that may apply is that, for practical reasons, the total number of participants is limited;

4. cluster-oriented institutions (service centres, associations) are dependent on members, and are generally open to all firms willing to join and pay, although some are more selective.

In addition to the issue of openness, there is also the geographical dimension. In all cases, cluster composition is defined by the area in which the initiative is developed and set to be destined for. This may hamper, although does not exclude, the building of linkages with actors (just) outside the regional boundaries.

4.1.7. Evaluation and monitoring

In a world where one policy initiative follows the other, and where justification of funding is an essential part of the policy process, evaluation is seen as a crucial activity. Evaluation activities can take place at different levels (within initiatives; within programmes, at the regional and higher spatial level), and serve various interests. For instance, at project and programme levels, monitoring may be closely related to intelligence gathering and the auditing process, representing a core activity in cluster
development through constant feedback, but may also underpin project legitimisation. At the regional level, the purpose may be to follow and compare different initiatives and to set out future direction for cluster development. At the national level, the main interest may be to exercise financial control and provide proper regulation for business support subsidies. Finally, at international levels there might be an interest in providing platforms for exchange of experiences and initiating new policy developments.

Given the nature of cluster initiatives, evaluation whether of single projects or programmes, is fraught with difficulties, some of which have already been mentioned in the context of funding. While it is generally easy to find some activity indicators, such as numbers of firms involved, of services provided, of networks facilitated, of fees, contracts and matched funding acquired, etc., there are no sound measures at hand to assess the impact of such activities on business performance and the regional economy. One problem is that, especially when initiatives aim at facilitating networking and capability improvement, the impact may be slow, diffused and 'diluted' by many other factors which impinge on business performance. Another problem is that, with the survival of support agencies and programmes depending on evaluation outcomes, evaluations may become ‘self-fulfilling’ with undesirable effects on the contents and delivery of business support. To boost performance, agencies might target firms expected to perform relatively well thus bypassing the ones most in need. They may shift to activities that have been proven to be viable and thus reduce the scope for innovative, but also riskier approaches. The organisation of support agencies may become increasingly evaluation-driven, shifting the organisational culture from a developmental orientation to a focus on short-term (survival) calculations.

These criticisms do not imply that evaluation should be dropped all together. Rather than using simple performance indicators, evaluation might aim at observing and recording particular methods and practices followed in well-defined problem areas, and use these for the exchange of ‘good practice’ between agents, as well as for the correction of what can be labelled as inferior performance. Another point is that evaluation should take into account the position of projects and agencies in the wider support system. Referring to technology services, for instance, Lagendijk and Charles (1997, p.24) argue that:

“In general however RTAC services are difficult to assess in terms of the real net effect they have on the firms in a region, and perhaps they must be considered more as a set of underpinning actions that build relationships and lubricate the wheels of the support system rather than have a considerable direct impact in their own right”

From a similar associational perspective, Sabel (1994) has argued that monitoring should be seen as an intrinsic component of a process of continuous learning by regional development institutions. Following Sabel’s idea of ‘learning-by-monitoring’, regional institutions may learn from previous actions and experiments and thus enhance collective
institutional competencies. The idea is that such learning supports a system of self-regulation, guiding the development of regional governance structures. Learning is part of the ongoing adaptation and improvement of existing programmes. It underpins strategic action, which may lead to new directions and support institutional changes.

An emphasis on a wider perspective of ‘learning-by-monitoring’ at a regional development level is not to suggest that evaluation of single initiatives would be pointless. On the contrary, one of the interesting questions is how various forms of evaluation and monitoring can intersect. Yet what is clear is that the issues of evaluation should not be isolated from wider questions of how regional development strategies are set, to what extent organisational context of support is geared towards learning, and how, at a more practical level, programmes are designed, objectives articulated and feedback mechanisms created.

This makes the policy cycle complete. The next two sections will present the issues while looking at clusters from two perspectives, that of the firms and of the region.

4.2. Expectations and outcomes for business development

What do clusters mean to firms? Cluster policies are essentially geared to regional development, but the level of action is that of businesses. Hence, business engagement is crucial for all cluster initiatives. Without tailoring support to business needs, it will stand little chance of success. So what are the issues when addressing the business perspective on clustering?

As an introductory note, it may already be observed that fostering engagement has been a difficult issue. In effect, for most entrepreneurs and business managers, the first confrontation with the concept has not been an enthusiastic one. Used to simple subsidy schemes, which were territory based and directly feeding into individual business development, the cluster concept seemed far from appealing. In particular, there was little appreciation for the fact that subsidies were to be spent on facilitation and administration rather than direct subsidies; and that cluster initiatives aimed at building linkages with other firms and organisations, rather than at directly supporting business capabilities. Especially for small firms, which generally treasure their independence, this poses a far from attractive prospect. Network developments are often antithetical to owner-manager cultures that prevail among SMEs (Curran & Blackburn, 1994). Indeed, from the perspective of the support sector (see below), convincing firms of the possible benefits of clustering has proven to be an important bottleneck in project development. Another negative factor has been that for many firms the concept reeked of academic pedantry.

Why would businesses participate in cluster initiatives and what would they expect to get out of it? This obviously depends on the local context and on the type of initiative, i.e. on what ‘participation’ entails in practice. When cluster policies are introduced against the background of industrial crisis the simple answer may be: survival, whatever it takes. In less
dramatic situations, the recognition of increased market pressure may make firms willing to share some of their experiences with peers. Moreover, businesses may feel that cluster-based industrial policy processes of ‘institution building’ may help them in furthering their interest and providing better tailored support without affecting their independence. Once cluster policies are set in train and demonstrate some success, finally, they may trigger interest from non-participating firms and firms in other industries.

4.2.1. Direct benefits: improving business capabilities through clustering

As indicated before, what businesses tend to appreciate most is customised support that helps them directly with improving their performance. In addition, they will generally be in favour of support that is well packaged and is linked to some notion of where businesses are heading. In the past, however, much support has been lacking both in a practical and strategic sense, and cluster initiatives have been presented as a way to improve the delivery of support as well as offering new contexts and directions of support.

Table 11 gives an illustration of how cluster initiatives may contribute to the development of business capabilities. Neither the list of capabilities nor the descriptions are exhaustive. What the table shows nevertheless is the variation between the different approaches, not only in the items addressed but also the process of support provision. For instance, the most ‘hands on’ approach with respect to capability development is the institutional one. Service centres have specific functions and assets developed at a collective level (market watch, library) which may have a direct impact on their members’ performance. Learning-oriented initiatives are less focused on such provisions, but they may help firms especially in the first phase of creating awareness, identifying needs and exchanging experiences with other firms. In focusing on business capabilities at the level of single firms, these examples endorse the view of clusters-as-method to improve individual business performance. In addition, the sharing of learning experiences among firms and in the use of collective services may facilitate networking and the linking of capabilities between firms.

The notion of linkages and the alignment of capabilities between firms is displayed by the network-building approach. Here businesses are expected to benefit from a more articulated division of labour and the development of a collective ‘mass’ to improve the joint position in the market, vis-à-vis banks, suppliers etc. The alignment of capabilities should however also be seen in a dynamic context (Langlois & Robertson, 1995). In particular, through clustering businesses may start to co-ordinate new investments in skills and equipment, as well as activities in the area of research and development. To facilitate such processes of capability alignment at an inter-firm level, businesses will need to go through a
Table 11 Individual business benefits from clustering initiatives

<table>
<thead>
<tr>
<th>Business capability</th>
<th>Industrial cluster (‘diamond’)</th>
<th>Institution-building (service centres)</th>
<th>Network-building (closed partnerships)</th>
<th>Learning-oriented (peer or mentor groups)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance</td>
<td>Financial regulation; support to venture capital</td>
<td>Facilitating bank access, co-operative schemes, providing collateral</td>
<td>Collective collateral</td>
<td>Exchanging awareness and experiences on loans and other financial affairs</td>
</tr>
<tr>
<td>Skills development</td>
<td>Education policy, labour market audit and policy apprenticeships schemes</td>
<td>Cluster training facilities; lobbying for training courses; addressing poaching</td>
<td>Aligning skill development among partners; jointly signing up to courses</td>
<td>Exchanging information and experiences on courses and support</td>
</tr>
<tr>
<td>Marketing and internationalisation</td>
<td>Trade policy, missions regulation; institutional framework (Chambers of Commerce, industry associations, etc.)</td>
<td>“Market watch”; assisting members with exporting and FDI; employing external agents; ‘region branding’</td>
<td>Developing &amp; marketing joint products; joint mass to access new markets</td>
<td>Exchanging information on new market channels</td>
</tr>
<tr>
<td>Purchasing</td>
<td>Regulatory conditions, supply chain development (incl. addressing ‘missing links’)</td>
<td>“Market watch” and joint purchasing strategies; awareness of supply chain management</td>
<td>Joint purchasing; aligning supply chain management</td>
<td>Exchanging experiences on purchasing and implementation of supply chain management</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Embedding in innovation system</td>
<td>“Technology watch”; provision of technical information (e.g., library, demonstration labs)</td>
<td>Aligning technological development between partners</td>
<td>Promoting awareness and absorption of ‘best practice’ technology</td>
</tr>
<tr>
<td>IT</td>
<td>Regulatory framework, infrastructural support</td>
<td>Awareness building, IT provision as common resource</td>
<td>Installing a joint IT network and connection</td>
<td>Exchange information on IT installation and use</td>
</tr>
<tr>
<td>Quality</td>
<td>Regulation of standards and certification; quality programmes</td>
<td>Assistance to certification</td>
<td>Joint certification strategy</td>
<td>Exchanging ‘good practice’ information on certification</td>
</tr>
</tbody>
</table>
process of increased awareness of existing capabilities in the cluster and of trust building.

The basic theme arising from this overview is to map out the links between cluster initiatives and the development of business capabilities. In addition, there are a number of other issues stemming directly from this practical side of cluster support: What do the firms contribute in terms of time and financial donations? Who is involved from businesses - managers, marketing staff, technical staff, shopfloor workers etc.? The latter questions may also reveal the kind of commitments firms have towards cluster initiatives.

4.2.2. Business networking: obtaining benefits from collaborating with other firms

Since cluster policies rely on the shaping of linkages of one sort or another, on a longer-term scale, trust is an important factor. Once first contacts have been facilitated, regular contacts and joint activities should contribute to the creation of trust as well as of certain routines of behaviour. As argued above, these processes are also essential for shifting from an interest in capability development at the single-firm level to the inter-firm level, thus facilitating clustering benefits.

Yet, moving to more collaborative attitudes, a highly complex issue emerges, the building of trust (see previous chapter). One interpretation of trust particularly relevant to businesses is as an asset derived from the investments of partners in collaborative activities, and the creation of information channels, behavioural routines, and corrective mechanisms to prevent the erosion of co-operative behaviour. For firms operating in networks, trust is built on the accumulation of ‘credit slips outstanding’ and a confidence in the ability of the network to respond to defection and opportunistic behaviour. One of the characteristics of this perspective is that trust can be accumulated as well as destroyed through ongoing social interaction. Many network and cluster members tell stories of how trust can wax and wane. In the context of cluster initiatives, moreover, it is not only trust between firms that counts, but also the trust and confidence in the mediator. The latter is crucial especially in the initial phases of a project, and is closely linked to the mediator’s competence and power to create confidence. The aim of a mediator, especially in small business clusters and in processes of ‘institution building’, is then to transform a radial pattern of trust (between the mediator and cluster members) into a criss-cross and denser pattern, which becomes the basis for a more enduring stock of social capital. The latter may also be facilitated by institutional developments (formation of associations), or through linking with existing institutions (such as Chambers of Commerce). When such processes take place at the regional level, they may also create a higher level of business commitment towards local development issues.

The issue of collaboration is further compounded by the role of power relations. In the literature, there has been a trend to associate networking and co-operation with a kind of egalitarian and democratic perception of
business interaction, notably in the context of the idea of an ‘integral economy’. This idea has been challenged by authors such as Harrison (1992) and Herrigel (1993). Harrison’s considers business networks from a ‘core-ring’ perspective, in which power plays an important role in shaping behaviour and strategies (see also Eccles & Nohria, 1992). The core in such networks consists of market and technology gatekeepers, such as large firms or firms with unique capabilities. In the context of clusters, the role of power is an obvious issue in the case of supply chain development around large firms as market ‘gatekeepers’. However, also when only SMEs are involved question of domination and control can be crucial. The way firms and agents respond to problems related to power often presents one of the best indicators of the strength of a network and the ‘social capital’ accumulated. While the building up of trust takes time, it can be rapidly undermined by sudden incidents induced by power struggles, causing major shifts in relational patterns and the stock of ‘social capital’.

A theme for research therefore is how cluster initiatives, from the perspective of the targeted businesses, contributed to the formation of trust, in its various dimensions of behavioural routines, the accumulation of mutual expectations and the corrective capacity of the network. Questions of power and domination are especially interesting when clusters involve firms of different sizes and with different positions in production chains. The question is then how clusters cope with such differences. With clusters largely dominated by SMEs, power issues may be invoked when relating the ‘story’ of clusters, notably with changes in cluster composition, shifts in direction, and the development of the coordination of resource sharing.

4.2.3. Institutional networking: obtaining benefits from local institutions

Another area in which firms will have certain expectations when they engage with cluster initiatives is the quality of contacts with regional organisations, such as business support organisations, representatives of regional development agencies, Chambers of Commerce, etc. Clusters generally lead to a different, more elaborate kind of interface with the public sector. Rather than filling in an application form to acquire a grant or visiting a business support ‘shop’, businesses are now confronted with mediators (brokers, facilitators) and institutions which sit between the public and private sector. This often implies a more intensive, and longer term engagement. The discussion above has already pointed out some of the advantages such an engagement may have: better articulation and matching of business needs and support, more emphasis on interaction and learning, the facilitation of self-managed support systems. However, it has also highlighted some important caveats. Long term engagement and commitment requires high-quality mediators that are knowledgeable of both the business and policy area. When these requirements are not met, firms might easily become disillusioned with the attempt of policy-makers to develop more durable, and more ‘associational’ forms of business support.
To what extent can clustering overcome the often poor image the public sector has in the eyes of business? The role of mediators and members of business associations or Chambers of Commerce may actually be of help here. Mediators, especially when drawn from industry, will generally not suffer from the ‘nine-to-five’ image associated with civil servants. Moreover, mediators and service centres, through intensive contact with client firms, may offer a better point of access to support than so-called ‘one-stop-shops’ (such as Business Link in the UK). The latter, while established in an attempt to address fragmentation and poor take-up of support, still tends to be too generic and lacking the sectoral insights which business require (Curran & Blackburn, 1994). Moreover, it is often not the fragmentation per se which poses a problem to firms, but the overall low quality of support, a lack of diagnostic skills, and lacking of specialised knowledge. Even worse, firms are confronted with incompetence, rivalry, and situations in which business support appears to serve the interests of the support agencies (funding, legitimacy) more than those of the firms. Similar experiences occur with business associations and Chambers. A crucial question is thus to what extent cluster initiatives have managed to overcome these problems and have managed to improve the image of the support sector in the eyes of their clients.

4.3. Expectation and outcomes for regional policy-making

As related above, policy-makers have shown an interest in cluster approaches for a variety of reasons, linked to both the objectives and methods of regional development policy. Cluster approaches, through the association with innovation and networking, respond to a shift to ‘supply side’ oriented development objectives and to the notion that competitiveness results from a process of interaction. In this context, the crux of clusters seems to be that such approaches marry a notion of economic restructuring (promoting new activities, protecting maturing sectors), with a more bottom-up, integrative, and facilitative approach at the micro and meso level of the regional economy. The latter responds to the ideas about the benefits that may be derived from collaboration, networking and ‘institution building’. At the same time, cluster approaches promise better tailored, cheaper, and more endurable methods of business support. The allure of cost-effectiveness, and even the prospect of self-sustaining support systems, has undoubtedly appealed to many policy-makers facing difficult decisions on budget cuts. To present the interests of the public sector in more detail, four issues will be highlighted here: the way clusters might contribute to regional capability building, defined as ‘club goods’, the role of funding, the demonstration effects from cluster approaches and the embedding of cluster initiatives in regional development strategies.

4.3.1. Anchoring cluster benefits into the regional economy: shaping ‘club
building are different. For firms, capacity building primarily means the acquisition of the skills, knowledge and assets to survive and develop in the market place, as depicted in Table 11. For SMEs, survival and continuing the business in its actual state is often more important than the ambition to grow. When growth takes place, larger firms may aspire to commercial and geographical expansion, spreading their wings to other regions and countries, becoming part of (inter)national circuits of trade, capital, marketing, technology, etc. For governments, on the other hand, capacity building is generally seen in the context of the creation of employment, increase of wealth and the support to innovation, with the benefits accruing to the regional community. Business capability building should thus be somehow spatially rooted, or ‘pinned down’, and linked to a regional ‘quality-oriented’ competitiveness strategy. Hence, policy-
makers want more than to secure SME survival, however important as a first step. SMEs are seen as playing an important role in the creation of innovative and flexible clusters of competitive advantage, and through that, of employment and wealth for the local community. Likewise, for large firms the embedding of and spin-off from their capabilities in the local economy is seen as vital. While firms are encouraged to spread their wings and embark on internationalisation strategies, and foreign firms are attracted to invest, the bottom line is to derive local benefits from such expansionary business activities. Local benefits are counted in terms of traded linkages and impact on the labour market; increasingly, however, they are seen in the context of creating ‘untraded interdependencies’ and learning effects between inward investments and local firms and organisations.

The term that will be used here for capabilities that are somehow spatially rooted or ‘pinned down’ is ‘club goods’. ‘Club goods’ are cluster-specific assets, which develop through and between firms as well as through the interaction with local organisations (cf. Bellini, 1998). ‘Club goods’ thus sit between the industrial cluster, consisting of interrelated firms as part of wider value chains, and the local institutional structure (Figure 2). These cluster assets evolve at what has been depicted as the interface between, on the one hand, industrial networks and chains, and, on the other, territorial governance structures. The accumulation of ‘club goods’ can take many forms, from ‘classical’ factors such as a labour pool, a common knowledge base and even ‘hard’ infrastructure, to institutional factors ranging from cluster-specific organisations (service centres, industry associations, training organisations, specialised knowledge centres or university departments) and more hidden assets. The latter includes cluster-specific knowledge diffused in the region, regional conventions and routines supporting cluster activities, and contributions to the regional identity (but not so much trust, since that is more tied to specific business networks).

The latter point bears directly on another issue where a difference can be noted between the perspectives of businesses and regional policy-makers, that is, trust. For businesses, as claimed before, what is most essential is the ‘social capital’ accumulated in the networks in which they participate. However, trust is not only related to development of collaboration between actors, but also to the wider environment and the issue of co-operation. Taking a regional perspective, this view of trust refers to the ingrained conventions, norms and values which have developed over time, and which have become part of the culture and tacit knowledge in the region (Storper, 1995b). Cluster policies are often part of the wider ambition to unlock entrenched forms of behaviour, to modify the culture, that is, to shape new conventions and behavioural routines. Like network programmes, cluster initiatives are often presented as attempts to overcome antipathies to networking and joint activities, that is, to instil a more co-operative culture. The resulting notion of trust goes beyond the idea of ‘credits slips outstanding’ and reflects socially embedded, rather than accumulated, patterns of behaviour (cf. Putnam, 1993). In the context
of regional development, the shaping of conventions is also related to the role of regional identity and the shaping of a common agenda geared to improving regional competitiveness and specialisation. This presents another level where cluster initiatives (particularly in a ‘top down’ fashion) may contribute to shaping ‘club goods’. The emphasis on conventions and trust means that ‘club goods’ do not only refer to economic externalities that, in one form or another, are shared between cluster members as common assets, but also to the more social and political aspects of business development.

As illustrated in figure 2, clubs goods play different role in policy-making. They not only reflect objects of cluster policy, but also instruments for cluster development by using the them for branding, as leverage for the search of funding, etc. Regions sell themselves by highlighting the presence of specialised knowledge and training centres, a high skilled labour pool etc. Moreover, the fact that ‘club goods’ are closely associated with, but do not match business capabilities offers a further qualification of the position of business support, and particularly of the notion of ‘tailoring’ support to businesses. Rather than seeing tailoring as merely responding more adequately to business needs, it should reflect the attempt of support agencies to shape business behaviour in such a way that they suit the wider aims of regional modernisation and development. That is, ‘club goods’ serve regional interests, not the interests of firms in the region. In order to maximise local benefits, regional institutions should monitor and facilitate the interaction between the development of business capabilities and regional ‘club goods’.

The ‘test’ suggested here for the empirical analysis is to see to what extent cluster policies and initiatives reflect an ambition for creating ‘club goods’. The core question is whether ‘club goods’ can actually be traced in the varied practice of cluster policy making and implementation, and how they related to the capability interests at the level of the firms.

4.3.2. Improved (cost)effectiveness of regional business support

Do cluster approaches reflect a more effective way to support business growth and regional development? Different ideas can be presented endorsing such a view. Because cluster initiatives are expected to involve longer-term relationships between different organisation in both the private and public sector, they lend themselves to the use of matched funding, and to a process in which public subsidy is gradually replaced by other streams of income. Cluster approaches thus meet the desire to make economic development less dependent on public funding. In reality, however, the issues of funding seems to reflect an often deceptive and even contradictory issue, related to the attitudes of policy-makers as well as the elusive nature of cluster approaches themselves.

While public sector actors often revere success cluster models (Italy, Silicon Valley, etc., they do not always realise under which specific conditions, and on which time scale these have evolved. Especially funding organisations tend to be impatient (Rosenfeld, 1996). Whereas expenses
are largely confined to administrative costs, project preparation, business auditing and mediating, the social complexity of networking and clustering is not always understood, or is at least found difficult to handle.

Here the basic distinction between cluster-as-target and clusters-as-method should be reiterated. A core issue accompanying cluster-as-targets is the issue of durability. Particularly in the case of small business clusters, much value has been attached to the continuation of the networks after funding ceases as a token of success and a justification of public support. This has had substantial impact on the role and aims of mediating. Rather than helping firms to appreciate the values of networking in a more general and flexible sense, mediators were inclined to create high levels of lasting business commitment to the projects and even to form tightly knit business groups. Even when it was acknowledged that networking was not intended to lead to mergers, as in the Danish Networking Programme (Ploughmann, 1991), policy-makers have been tempted to count a programme’s success in terms of ‘enduring’ networks, and the numbers of jobs ‘secured’ or, even better, ‘created’.

In the case of clusters-as-method, as instrument to improve support provision along cluster lines, the interest of policy-makers will largely correspond to those of the businesses involved: better engagement, more quality, more foresight and better integration of support packages. Cost-effectiveness may be increased by aiming at higher fees and tighter monitoring. As indicated before, however, such pressures should be used with caution, since they may induce behaviour averse to risk-taking and therefore to experimentation and innovation.

In summary, core issues related to cost-effectiveness are: In what form are clusters expected to ‘endure’ after funding is withdrawn, and what type of self-support is envisaged? How does the funding position in which support agencies find themselves affect the initiatives and the ‘survival’ of cluster development? What kinds of time horizons are adopted for reducing subsidies and increasing fee? What has been realised of these expectations? How has clustering improved the access of firms to, and the value of business support? The answers of course will obviously differ between the types of cluster initiative employed. Nevertheless, specific answers to these questions may help to understand the role and management of funding and to develop new strategies towards the framework, nature and time span of subsidy provision.

**4.3.3. Demonstration effects: spreading benefits to other businesses and sectors**

Concerns about cost-effectiveness and durability bear directly on the issue of demonstration effects. Particularly, in the cultural and ‘learning’ perspectives of network and cluster-oriented policies, much value is attached to the dissemination of the ‘message’ of co-operation, networking and clustering, to instil behavioural change. The Danish Networking Programme, for instance, was intended to “not to subsidise collaboration but to demonstrate its value” (Rosenfeld, 1996, p.249).
Demonstration effects are supposed to work in several ways. First, it is expected that businesses and organisations participating in cluster initiatives will learn from the experience and embed these lessons in routines and attitudes which will outlast the project’s life span and the project’s client base. Demonstration effects may thus contribute to the shaping of regional ‘club goods’. Second, the experiences are hoped to trigger interest and awareness among other firms and organisations, which may thus engage with existing initiatives or trigger new ones, with or without public support. Third, cluster developments in one area of economic development may spin off to other areas. This may then trigger a ‘bottom-up’ initiative led by businesses and/or related institutions to start their own cluster initiative. Finally, especially relevant to national and international organisations, cluster policies in one region may lead to an interest in replication in other regions. While the latter level is beyond the scope of discussion here, it should be taken into account when thinking about the question of how policies are developed at supra-regional levels and how experiences are exchanged between regions.

At the regional level, how are these ambitions translated into practical measures? Like building trust and changing organisational behaviour and culture, demonstration effects are difficult to envisage, facilitate, or monitor. Practical measures often come down to attempts to broadcast regular updates on the progress of initiatives, or to involve other actors by dissemination seminars and other events. PR has become an increasingly important dimension in cluster initiatives. Another method to arouse interest is by involving high-profile firms, such as leading larger firms in the region, in the launch and presentation of a project. SMEs may be interested by strategies which target the more informal routes of exchange between business through ‘word of mouth’. The latter may be supported by a kind of associational strategy. For instance, by building links between cluster initiatives and existing business groups, Chambers of Commerce, or popular business support programmes, firms may gradually be enrolled. A core theme here is thus how cluster initiatives, with respect to dissemination and promotion, are embedded in the business community and support structures.

The message behind demonstration effects may be seen as self-evident, and its translation in promotion activities as relatively straightforward. In other respects, however, the pursuing of spin-off within the daily practice of cluster development may pose some serious dilemmas. The most obvious dilemma stems from the inclination to secure the survival of supported networks. On the one hand, survival is seen as an important part of the message: ‘look it works, the networks are still there and they are thriving’. On the other hand, the need for survival may induce processes of strong bonding between agencies and their targeted firms. Support programmes may thus run the risk of creating a closely knitted group without any benefits for the wider business community. Indeed, once targeted, firms tend to become the ‘babies’ of support agencies. With their interests increasingly intertwined, they may become the envy rather than role model of other firms. The result may be a catch-22: while the idea of
creating demonstration models justifies ‘pilot’ funding, the need to have successful - rather than explorative, experimental - models may turn the pilots into little well-nurtured stable enclaves, as an extreme form of ‘picking winners’.

The question of durability differs obviously according to specific objectives set and methods chosen. In the case of ‘institution building’, for instance, there may be strong reasons why a certain service centre should continue to receive a high level of subsidy. In the case of ‘mentoring’, on the other hand, the continuation of the relationship will often be considered as an unintended but welcomed consequence of the initiative. Nevertheless, the issue of demonstration effects seems to be relevant to a majority of cluster initiatives. A key question is thus how these effects are facilitated and evaluated. Related themes of interest are the procedures behind the selection of ‘pilots’, if this method is used, and how questions of inclusion and exclusion are addressed.

4.3.4. Embedding of clustering in regional economic policies

The ambition to have demonstration effects from cluster initiatives leads to the last theme: the way initiatives, while evolving, are embedded in the arena of regional development policy. What lessons are learnt by the wider policy community? To some extent, this is a functional question that could be assessed in the context of how initiatives emerged in the wider area of regional development policies, and how they are monitored and evaluated. The discussion so far has mainly focused on initiatives that were conceived in a kind of ‘top-down’ way. Cluster initiatives emerged from a new phase of regional strategic policy, or from a change in direction in the activities of core organisations such as RDAs. The initiatives themselves are then generally framed in a wider context of cluster targeting. Questions of embedding can then be seen at two levels: between the cluster initiatives and the overall cluster strategy, and between the overall cluster strategy and the whole package of regional policy.

It has also been recognised, however, that some initiatives are developed in a full bottom-up way, as a stand-alone project initiated by a single business support agency or business associations or business groups themselves (Rosenfeld, 1995). In that case, the project does not form part of a wider strategy, and embedding also needs to occur in a bottom-up way. To what extent lessons are learnt in the region, will depend on how receptive other regional agents are for new approaches in business support. It will also depend on the success of the cluster project, and the capacities and willingness of the project participants to communicate the project and its outcomes.

Embedding also involves a question of accountability. This brings back some of the critical points made in the debate on associational tendencies: who is included and excluded in the decision-making process, in what manner; how does this relate to the businesses and organisations targeted by cluster policies? Embedding in this sense refers to the role and
evolution of particular governance structures in an area, and the lines of responsibility and accountability developed in those structures.

Embedding, finally, facilitates the bridging of the two essential dimensions of cluster policies, the micro/meso level of business development and networking, and the regional economic structure. For broad ‘top-down’ approaches, embedding is facilitated by cluster maps and the way the cluster initiatives intersects with other areas of regional policy. However, also for stand-alone initiatives, developed in a bottom up way, the link with the regional economic structure may be crucial. It is important for the success and follow-up of the initiative that the targeted economic activities are presented as a (potential) growth sector for the region. In both cases, developing the interface between micro/meso and the regional economic structure is a vital instrument in the aligning of business interests with regional interests. Examining the articulation of this interface, and the development of knowledge and governance infrastructure associated with it, will thus form an important part of the analysis.

4.3.5. The learning dimension of clusters: towards ‘cluster intelligence’ or

Different images have been presented here about the role of knowledge in cluster facilitation. On the one hand, the policy cycle tends to suggest that cluster facilitation is preceded by an initial stage of analysis and auditing. Such a phase may even be a demarcated activity carried out externally by consultancies, which lay down lists of clusters-to-target in glossy reports with titles like ‘regional competitiveness through clustering’. On the other hand, a more integral approach can be envisaged, in which auditing and monitoring is part of the cluster initiative itself. That is, rather than building a stock of ‘cluster intelligence’, the aim could be to build ‘intelligent clusters’ that are largely self-governing, self-evolving and, in the end, also largely self-analysing and self-reflecting. Such an outcome could be a major contribution to the development of ‘learning regions’.

One argument in favour of the idea that analysis should be part and parcel of cluster initiatives is that the process, more than the outcome of knowledge acquisition contributes significantly to the shaping of the cluster. This also bears on the issue of embedding, since a more integrated approach to learning affects the relationship between support providers and their clients. ‘Getting to know’ possible clients of support is not just the recording of business needs; it is also a social process which brings agencies closer to their clients. In the words of Rosenfeld (1995, p. 134):

“An institution or hub must be sufficiently familiar with the industry it serves to earn the confidence and trust of that industry’s leaders. Local organisations can get to know firms offering programmes of interest or collective services, by conducting surveys - or simply by knocking on doors”

‘Getting to know’ is thus part of an associational process, and closely linked to processes of interactive learning, the building of trust and the creation of ‘tacit’ rather than codified knowledge. Industry councils,
service centres and mediators may be seen as core agents in managing knowledge flows and the creation of ‘intelligent clusters’. In an ideal situation, cluster institutions act as a ‘sensing mechanism’ with various scanning functions (technology, business processes, marketing, regulatory).

In such a perspective, learning processes lie at the heart of ‘institution building’ and institutional development, and analysis has become a continuous, self-inflicted, self-correcting process of knowledge acquisition. This is not to deny that, on occasions, analysis may involve the commissioning of research from an independent research centre or consultancy. The latter however is not part of a conventional policy cycle in which policy design is informed by analysis, but is triggered by a specific knowledge demand arising from the clusters itself.

The deeper issue which this debate touches upon is that of the role of knowledge, and especially ‘reflexive’ knowledge, i.e. knowledge about the development and position of regional business systems (Storper, 1997a; Gibbons et al., 1994). Within the wider debate on the position of knowledge in the economy, ‘cluster intelligence’ depicts a conventional image of the use of knowledge, as the application of the results of research and analysis to the solving of well-defined problems. Businesses then play the role of informers and advisors of policy-relevant information. ‘Intelligent clusters’, on the other hand, reflect a more interactive model, in which the processing reflexive knowledge is an intrinsic component of the cluster capabilities themselves. In line with associational thinking, businesses now perform a role as full partners in more strategic process of knowledge acquisition and application. From such a perspective, institutional developments, both at the inter-firm level and those affecting the relationships between business centres, knowledge centres and associations, are increasingly geared towards the support of a knowledge infrastructure and the dynamics of knowledge creation and learning. Clusters can thus be seen as a cornerstone of a ‘learning region’.

The fundamental question arising from this debate is how knowledge flows at the level of cluster development are organised and how they affect the shaping of cluster relations. Yet, however interesting, the search for knowledge flows goes beyond the scope of the present study. This heading therefore serves mainly to put the role of analysis and the use of policy models further into perspective. In particular in more alternative policy approaches to clustering, an interesting question is to see to what extent they show capabilities of self-monitoring and self-reflection.

4.4. The research Pro Forma

The themes and issues presented in this chapter are summarised in Table 12 below. This will serve as the basic template for research in the next chapter.
<table>
<thead>
<tr>
<th>Themes</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy cycle</strong></td>
<td></td>
</tr>
<tr>
<td>Conception and launching</td>
<td>Where did policy-makers find the inspiration for the cluster initiative? What was the economic-regional background? What cluster approach is pursued (framework conditions, network building, etc)?</td>
</tr>
<tr>
<td>Role of support agencies and funding regimes</td>
<td>What are the funding conditions for clustering initiatives? What kind of institutional arrangements (partnerships, networks) underpin cluster initiatives?</td>
</tr>
<tr>
<td>Cluster mapping and audits</td>
<td>How were targeted clusters selected? What was the quality and depth of the analysis? To what extent do business actors participate in the cluster analysis?</td>
</tr>
<tr>
<td>Setting objectives</td>
<td>Given the policy context and problem analysis, how are objectives and methods developed? What are the possibilities for changing the objectives and methods?</td>
</tr>
<tr>
<td>Implementation</td>
<td>How has the implementation succeeded in practice? What is the role of mediators?</td>
</tr>
<tr>
<td>Cluster composition</td>
<td>To what extent are the clusters ‘open’ versus ‘closed’? Are there geographical constraints to business participation?</td>
</tr>
<tr>
<td>Evaluation and monitoring</td>
<td>How are clusters evaluated and monitored? How is the data used?</td>
</tr>
<tr>
<td><strong>Business development perspective</strong></td>
<td></td>
</tr>
<tr>
<td>Direct benefits: improving business capabilities through clustering</td>
<td>To what extent do firms see improvement of business capabilities due to clustering? To what extent are these individual benefits; to what extent are they part of network building? Which resources have businesses spent on cluster initiatives?</td>
</tr>
<tr>
<td>Business networking: obtaining benefits from collaborating with other firms</td>
<td>What are the practical and cultural obstacles to collaboration? How can ‘social capital’ be built up among firms? What kind of corrective institutional capacity would assist this process?</td>
</tr>
<tr>
<td>Institutional networking: obtaining benefits from local institutions</td>
<td>To what extent has policy-induced clustering improved the image of and engagement with the local public sector and regional business association?</td>
</tr>
<tr>
<td><strong>Regional policy perspective</strong></td>
<td></td>
</tr>
<tr>
<td>Anchoring cluster benefits into the regional economy: shaping ‘club goods’</td>
<td>Which regional assets are developed through clustering (partially) independent from the business firms involved? To what extent are the assets of a ‘classical’ (labour, knowledge centres, infrastructure) or a more intangible nature (knowledge, ‘conventions’, identity)</td>
</tr>
<tr>
<td>Effectiveness of regional business support</td>
<td>To what extent has the cluster approach contributed to more (cost)effective ways of regional business support?</td>
</tr>
<tr>
<td>Demonstration effects</td>
<td>How have clustering benefits accrued to the wider regional economy; i.e. other firms in similar sectors, or in other sectors? How have policy-makers addressed pilots and the issue of sustainability?</td>
</tr>
<tr>
<td>Embedding of cluster initiatives in regional specialisation strategies</td>
<td>Have cluster initiatives been part of integrated programmes or do they present ‘stand alone’ cluster initiatives? How do the initiatives contribute to regional specialisation?</td>
</tr>
<tr>
<td>The learning dimension of clusters</td>
<td>What has been the knowledge orientation of clustering: creating ‘cluster intelligence’ or to ‘intelligent clusters’? What have been the wider learning implications at the regional level?</td>
</tr>
<tr>
<td><strong>Conclusion: aligning business and regional interests</strong></td>
<td>To what extent have actors in the policy/support domain been able to attune initiatives to regional interest? To what extent have businesses become committed to the regional cause?</td>
</tr>
</tbody>
</table>
Chapter Five. Introduction to the CORE regions.

The remainder of this study is devoted to the presentation of the results from the case studies. The present chapter will introduce the regions. The next chapter will deal with cluster initiatives at an (inter)sectoral level. The last chapter before the conclusion will address the SME-oriented initiatives. An overview of the regions and cluster cases, with an indication of core issues, is given in Table 13. The discussion of the case studies will generally follow the issues listed in the ‘pro-forma’ above. Depending on the specific cluster focus and level detail, in some cases issues have been joined or omitted. For the introduction of the regions here, the discussion has been structured under five headings:

- the general background for regional policy making
- the institutional context
- regional policies and accountability,
- SME orientation,
- and the recent shaping of cluster strategies.

The chapter will first discuss the two more peripheral regions, North East of England and Aragón, followed by the German areas.

<table>
<thead>
<tr>
<th>region</th>
<th>targeted sectors</th>
<th>cluster type(s)</th>
<th>cluster aims</th>
<th>section</th>
</tr>
</thead>
<tbody>
<tr>
<td>NE of England (Tyneside)</td>
<td>automotive</td>
<td>networking</td>
<td>embedding of foreign investors</td>
<td>0</td>
</tr>
<tr>
<td>Hessen, NRW</td>
<td>automotive (networking)</td>
<td>networking/ learning</td>
<td>securing/anchoring of established activities</td>
<td>0</td>
</tr>
<tr>
<td>NE of England</td>
<td>marine offshore</td>
<td>institution building</td>
<td>revitalisation of marine industries</td>
<td>0</td>
</tr>
<tr>
<td>Aragón</td>
<td>wine</td>
<td>institution building</td>
<td>modernisation of the wine sector</td>
<td>0</td>
</tr>
<tr>
<td>NRW (Bergisches Land)</td>
<td>chemical industry</td>
<td>learning oriented/ networking</td>
<td>focus groups for collective strategies</td>
<td>0</td>
</tr>
<tr>
<td>NE of England</td>
<td>various sectors</td>
<td>network oriented</td>
<td>joint marketing and other activities</td>
<td>0</td>
</tr>
</tbody>
</table>
5.1. North East England (Tyneside) and Aragón

Aragón and the North East of England occupy peripheral positions in the European economy. Both have gone through a period of industrial crisis and decline, although they still display above average shares of industrial production. The North East of England was once one of the most industrialised and innovative regions in Europe, with a strong specialisation in metal construction, shipbuilding and mining, with Tyneside as one of the major concentration areas (which will receive most attention here). In the post-war period, however, the region has lost a large part of its industrial strength. Aragón, in Northeast Spain, has had a modest industrial development, with a specialisation in metal production, which lost most of its dynamism during 1960s and 1970s. While there are many differences between the two regions in their social, political and economic features, various other similarities can be mentioned. Both areas display some degree of regional identity. Moreover, Tyneside and Aragón are of a comparable size in population (over 1 million), and they have both recently gone through a process of strengthening the role of local institutions, in a rather convoluted and often uncoordinated way. As a result, both regions show an abundance of organisations, with many functions overlapping and some lacking, and with little coherence at the regional level. These similarities give grounds for a joint introduction.

5.1.1. Regional policy background

In the North East and Aragón, the development of regional industrial policy and business support has evolved along similar paths: (1) attracting foreign investments, and (2) the development of indigenous firms, notably SMEs. The first strategy has been prominent in the North East since the mid-1970s, and has resulted in a strong inflow of foreign investors, with as the latest (although short-lived) triumph the establishment of a state-of-the-art microchip factory by Siemens. In Aragón, the foreign investment strategy has been historically weak but recently obtained major priority. The presence of major firms such as Samsung, Siemens and Nissan in the North East, and Opel, Siemens (Balay) and Schindler in Aragón played an important role in shaping local agencies' perception of the role foreign investment in improving the regional economy, although detailed institutional responses have been very different. What both regions share is the view that foreign investments, apart from direct and indirect job and wealth creation, serve for further external promotion of the region, as examples of best business practices, and for the development of supply chains. In particular in the North East, this view endorses the dominant perception that, given the low competencies of indigenous firms, the only way to spark off economic growth is through ‘external dynamics’ based on foreign investments, as illustrated by the following quote from the leading development organisation:

(...) internal dynamic was at best weak and probably almost absent.

(...) An alternative strategy would be to rely on an external dynamic,

the infusion of investment from outside the Region and/or the use of
Specific interests in the development of SMEs, on the other hand, stem from the perception that the indigenous sectors are presently underperforming and may be contain vital growth potentials once certain hurdles are overcome. In both regions, the poor performance of indigenous firms is attributed to two core factors. First, the lack of entrepreneurial spirit causing a low level of business start-ups and a low propensity to pick up and develop new technologies. In the North East, for instance, this translates in a relatively low number of registered firms (per inhabitant, almost 40% lower than in Wales, Hall Aitken Ass., 1996); in Aragón a major concern is the low valued added in indigenous resource-based industries (notably food and drinks, but also mining). The second factor in the absence of a culture of trust and collaboration, combined with a serious lack of interest in exporting, quality improvement, investment in new processes etc. This awareness has encouraged business support agencies to develop different agendas to assist local firms, varying from direct support to start-ups, improvement of skills, management, marketing, etc. to more elaborate attempts to encourage inter-firm networking.

While most actual concerns about SME development and the nurturing of indigenous sectors are similar, the interests stem from different backgrounds. In Aragón, there has been a long-standing debate about the role of external vs. indigenous sector, especially when large investments in the automotive production were announced (Opel in the early eighties, followed by suppliers). A prominent local economist, Biescas Ferrer, for instance, preferred more support to indigenous sectors - especially linked to agriculture - to increased foreign investments. Commenting on the impact of Opel in the late 1980s and early 1990s, he wrote:

“it does not seem recommendable to us to stimulate in excess, as has happened in the last years, the automobile sector which, in addition to a minimal linkage capacity [...], could provoke an excessive dependency involving a new risk factor for our economy” (Biescas Ferrer, 1993, p.87, translated by the author).

In the North East, the idea of a trade-off between external and indigenous has not been such a major issue in the past. Only recently, the recognition has grown that a sole emphasis on foreign investment will not solve unemployment and other structural economic problems. Not only has the total balance of jobs created been modest compared with the employment needs of the local economy (although estimations vary widely in this respect), even the organisations attracting foreign investors generally admit that large international firms are not longer the main sources of job creation. In strategy documents as well as the actions in the local support sector, emphasis has thus shifted from solely attraction to forging relationships between foreign and local plants, as well as measures targeting local SMEs. Although capturing foreign investments still is a major priority, the discourse on development now includes concepts of extracting more ‘value added’ from investments, on quality aspects, and,
increasingly, on the need for learning, not only in firms but also in the wider regional economy, notably the labour force:

If we are to become a genuinely world class region we have to learn and learn quickly - we need better skills and better processes. What’s more we have to make sure that once our finest minds are contributing to the growth of the region they aren’t lured away by other regions (Susan Johnson, Chief Executive Northern Business Forum, The Journal, May 22, 1997.)

In the summer of 1998, the Siemens and Fujitsu plants, as well as some other externally owned plants, were closed. In the case of Siemens, this only happened two years after the plant opening. This has further contributed to the debate on the prominence of foreign investment in regional development policies.

Quality and learning have also become major themes in Aragón, and several quality organisations and programmes have been established over the last decade. In one of the most prominent quality programmes, PRIMA, foreign firms act as role models and mentors for indigenous firms.

5.1.2. The institutional context

While the major themes and objectives of regional industrial policy are broadly similar, the institutional setting in which policies and initiatives develop varies widely between the two regions. In Aragón, industrial policy is primarily a responsibility of the regional government (DGA), although many programmes are duplicated at other spatial levels (councils, districts, and provinces). The DGA acquired basic competencies from Madrid in 1984 (health, education, environment, housing, industry, and agricultural reform), and became more focused on economic support in 1988. The recent territorial reform (1997) in Spain has completed the devolution process, with a greater local responsibility for economic affairs. The DGA forms a spider in a web of regional agencies, in which the other main centres of control are the local banks, the University, the local Business Federation (CREA), the Chamber of Commerce and the banks (Figure 3).

The North East, on the other hand, lacks a regional government, and has even gone through a period in which the position of local government has weakened. The main trend since the early 80s has been to transfer responsibilities from local authorities to semi-private organisations that operate as little ‘platoons’ from central government (Hay, 1994), although, more than other regions in England, the North East has retained a regional identity and strength in its institutional fabric. The result has been a complex map of institutional linkages, in which the key role is played by the local offices of central government (GONE), the Training and Enterprise Councils (TECs) and the Northern Development Company (NDC). While the Local Authorities are represented in the latter, their role has generally been weakened through national measures by the Conservative government in the 1980s. The impression is, however, that
North East Local Authorities have suffered less than in other parts of the country, due to the strong regional identity and tendency to collective action.

Apart from the politics of devolution and central control, a second factor that has driven institutional developments is the availability of funds. Aragón was unfortunate to have its 1988 regional product just above the eligibility limit for Objective One, which some commentators attribute to the presence of Opel. Only some parts of Zaragoza can claim Objective Two funding, while most rural areas are eligible under 5b. More dramatic is the fact that due to overspending and a persistent economic crisis in the late 80s-early 90s, accumulating debts forced the DGA to reduce its support to regional development (Bandres, 1994; Mené Marcén, 1994). One of the consequences was a cut in the budgets for regional technology centres. Together with the political turmoil that followed the budget crisis, the regional capacity to develop and implement a coherent and effective form of regional industrial policy was thwarted. General poor economic performance, moreover, undermined the position of support organisations issuing soft loans (such as ARAVAL). Only organisations with a wider funding basis and a strong business support, such as the organisations in the agricultural sector (e.g., DAYSA), could sustain their level of service.

In contrast, the North East has been able to draw from a variety of funds, due to its eligibility for various regeneration programmes of the central government, and, most importantly, for Objective Two funding from the EU. The latter has facilitated the establishment of a whole range of regional agencies focused on technology transfer (e.g. RTC North, the local Innovation Relay Centre), informatics, technological support for specific sectors and business support. EU Objective Two funding has also obliged the region to establish a central co-ordinating mechanism, the
Programme Monitoring Committee (PMC), with a regional representation (Figure 4). As part of the application procedure, the PMC commissions research on regional development, and lays down its priorities and justification for funding in a Single Programming Document (SPD), which is produced for each programming period (three years).

A third factor affecting local 'institution building' has been the need to respond to industrial crisis. A long history of industrial decline and rising chronic unemployment (coal mining, shipbuilding and steel production reduced their employment share between '75 and '92 from 12 to 3%, largely resulting in job losses) triggered the establishment of the North East Development Council by local authorities, which became the first regional organisation successful in attracting foreign investments. NEDC was converted into the Northern Development Company (NDC) in 1987, with less dependence on local authorities. Inspired by the successes of the Welsh Development Agency and Scottish Enterprise in attracting foreign investments, NDC’s mandate was to promote the region as an attractive location for foreign investors. With the help of NDC’s promotional activities, the North East, with less than 5% of the national GDP, managed to attract more than 10% of total foreign investments into the UK between 1990 and 1993. Over the last five years, activities have shifted from purely attraction, and site and grant provision to a more long term engagement focusing on generating more ‘value added’ from the investment for the regional economy. In 1994, the phrase ‘adding value’ was also included in
“Creating prosperity in the North of England by delivering continuous regional investment and adding value to it.”

The calling of the organisation widened accordingly from site promotion to the task “to make the business case for investing in the region” (The Journal, May 22, 1997). In practical terms, NDC has broadened its activities towards ‘after-care’ services, primarily in the areas of business expansion, and supply chain development, based on a careful process of “client expectation management”. To improve trade links within the regional economy, NDC has also supported the local establishment of a Regional Procurement Office (a national initiative). The office is staffed with sector specialists, and provides access to a database with 8000 companies, as well as to NDC’s own database (‘Northern Business Dataline’). NDC also quotes an additional reason for why it should assist larger indigenous firms. Increasingly, according to NDC Programme 1996/97, such firms fall also prey to inward investment agencies from other parts of the world, and thus need, like foreign branches, to be anchored strongly within the local economy. This comment clearly illustrates how the competitive environment in which this kind of organisation works evolves, as well as the kind of mindset with which these problems are approached.

In Aragón, the awareness of crisis and structural economic problems is of a more recent date. Looking in particular at experiences in Catalonia, the DGA established a regional development agency, the Instituto Aragonés de Fomento (IAF) (1990) with the mandate to develop and implement a strategic plan for the region. Apart from its strategic function, IAF has initiated several programmes, such as EXPORTA, an export-promoting programme aimed at SMEs, and PRIMA, a quality awareness and enhancement programme. Compared with its peers in Spain, however, IAF is strongly limited in staff and other resources it can draw on.

A crucial factor in explaining the different paths of institutional developments is the difference in the attitudes and perceptions in the economic development and support sector in the two regions. This is partly the result of different histories of institutional development, but also because of different administrative cultures. In Aragón, the operations of the DGA and related organisations are very much based on a traditional civil service routine and mentality. The territorial dimension, i.e. questions of the spatial distribution of resources and income, plays an important role in general thinking about regional economic development. The information strategy in Aragón relies heavily on formal analysis based on statistical data and strategic input from consultancies (see for instance Instituto Aragonés de Fomento, 1992), resulting in a voluminous amount of reports, studies and planning documents. This culture translates into a orientation towards thoroughly planned and phased initiatives, which are limited in scope and size, and are not always seen as adequately targeted on meeting the needs of the local economy (Serrano Sanz & Bandres Moline, 1992). In response, the business federation has made a case for a better co-ordination of regional industrial policy, by strengthening the role of IAF and by a stronger orientation towards business needs. According to
Hidalgo Arribas (1995), the region should ‘get its act together’ in attracting foreign investments, in which it has been lagging behind most other Spanish and European regions (Gil & Suarez, 1995). There has also been a call for aligning the educational system more to the needs of business by raising the level of vocational training and apprenticeships (CREA, 1994).

The behaviour of NDC and other development corporations contrast sharply with the Aragonese case. The working culture in NDC, for instance, reflects the fact that most of its staff have a background in industry, or in the academic field of applied economics. The organisation focuses on acquiring strategic insight into the investment plans and possibilities of firms outside and, since the mid-1990s, inside the region. This information is used to manipulate investment behaviour, to broker between firms inside and outside the region, and to influence local decision making processes that may affect business investments. The process of information gathering and application are ‘hands on’, and forms part of the daily routine of the so-called Business Development Managers (BDMs) and foreign representatives of the organisation. Besides the company databases developed and used by NDC, most ‘intelligence’ is thus of transient, strategic, sensitive and often even secretive nature, which is largely stored in the heads of staff rather than in codified forms. While this type of knowledge acquisition suits the investment promotion activities of NDC, the corollary of this practice is that there little exchange of information with other organisations. Not much work is commissioned from research organisations or consultants, nor is there much exchange of knowledge with other stakeholders in regional development activities, except when it required for activities such as drawing up the SPD.

However, the working culture of NDC does not prevent it from working with other organisations. NDC endorses a partnership or team approach, through which it engages, in particular, with Local Authorities and TECs. With larger projects, NDC also assists in the appointment of specific project managers and project teams within the areas in which new investments are anticipated. All these contacts, and the partnership approach in general, should be seen as an extension of the organisation’s main interest in ‘making the business case for investment’. Networking and partnering is for NDC primarily an operational instrument to pursue its own goals more effectively; it is not a way to engage in a debate with other regional actors on the broader parameters and objectives of regional development initiatives. While the success of NDC in attracting foreign investments is highly appreciated, its insular and secretive behaviour is often resented by other local organisation.

From a governance perspective, one of the strengths of the North East is indeed its proven capacity to create partnerships, not only around NDC but also TECs, Local Authorities and other organisations, allowing the region to respond quickly and effectively to new opportunities in investments, funding, etc. Over the last decade, the North East has built up a ‘partnership’ reputation not only in England but also among potential...
investors abroad. Moreover, through its partnership capacity, the regional has been able to extract a rather effective level of institutional capacity out of a highly convoluted governance structure. It should also be said however that partnerships do not solve problems of organisational complexity and incoherence. On the contrary, while they may temporarily solve governance problems, in the end they add another organisational layer. Partnerships are not likely do not present a step towards a structurally simpler and more coherent governance system. Perhaps the establishment of a Regional Development Agency, as foreseen and prepared at the moment, will help to bring some structural changes to the governance structure. In particular, it may be hoped that future changes may increase the regional capacity for consultation and collective agenda-setting, something that at the moment is only undertaken to some degree in the context of the Structural Funds.

In Aragón partnership tendencies have only emerged recently, and so far have had a limited effect. Opel and a groups of other foreign investors have been involved in the development and running of the IAF Quality programme (PRIMA), in which they act as levers to bring local firms on board. Opel has triggered various forms of collaboration, within the private sector as well as with the public sector, but these are confined largely to the municipalities around Figuerueles, where the Opel plant is located. Opel has also been a founder of a national training centre in the region, to meet training needs in the automotive and wider manufacturing sector (Serrano Sanz & Bandres Moline, 1992). However, with the exception of the role as a mentor, the institutional response to the presence of Opel in the region has been rather low, a far cry from the eagerness with which a wide variety of organisations in the North East have welcomed and approached major investors such as Nissan and (as it first seemed) Siemens.

5.1.3. Regional policy development and accountability

There is no doubt that the institutional development in both regions has provided an environment for new initiatives, supported by a variety of organisations and funding sources. At a strategic level, a core question is how regional policies are accounted for, how is it monitored? At this point, the two regions differ considerably. In Aragón, the fact that IAF and other organisations depend on an elected regional government provides a formal base of democratic control. Little has been done, however, in the planning and implementation of regional strategies to involve the social partners on a more direct basis. Aragón has a regional platform with representatives from the government, business federations, and unions (Consejo Económico y Social de Aragón), which regularly produces a comprehensive, but non-binding three-party document on local economic development (see Gobierno de Aragón et al., 1996). Ironically, IAF commissioned Anderson Consultants to produce, with help of foreign agencies such as Scottish Enterprise and NOMISMA, its own strategy document (Instituto Aragonés de Fomento, 1992). However impressive this effort has been, the lack of embedding of the plan in regional socio-
economic circuits has, in the view of other social partners, resulted in a poor follow-up in terms of implementation and assessment. Not unsurprisingly, one of the core recommendations in the three-party document is a stronger representation of business and labour in regional policy. In the end, these unrelated lines of strategic planning have resulted in a strategic and even institutional vacuum.

The North East lacks a democratically elected regional government. It even lacks a central body that is in charge of developing a regional development strategy. In the future, this might change with the expected founding of a Regional Development Agency and the possible creation of a Regional Assembly. At present, however, control and monitoring reside, largely in an ad-hoc manner, in a peculiar combination of the localised control of the central state (notably through Government Office North East and the TECs), the funding regime imposed by ERDF (see Figure 4) and the various platforms where different organisations and social partners meet. Business interests are in general well presented, although often more through direct contact than through representative organisations.

As part of the development of a regional economic strategy in the context of wider structure of territorial governance, therefore, one of the key tasks of a future RDA will be to develop a proper way of assessing, and to some extent guiding, projects, partnerships and new institutional ventures. The challenge will be to impose some kind of democratic control and monitoring while keeping open the possibilities for agencies to be engaged in different types of networks and projects. For both the regions discussed, this presents a considerable challenge.

5.1.4. SME orientation

Attracting and embedding foreign investors in the regional economy can offer an important basis for developing an entrepreneurial approach in regional development, and for developing thinking in terms of supply chains and networking. Because of the nature of the targets involved, i.e. large powerful firms, there is a strong incentive to mobilise resources around one focal organisation, such as IAF or NDC, although these (especially the latter) may then engage other local organisations. Looking at the support to SMEs, a much more diffuse pattern emerges. Support to SMEs has been an area where national and European programmes and funding opportunities have proliferated over the last twenty or so years. On the whole, the initiatives developed show little cohesion; they strongly differ in objectives, approaches, target groups, life span etc. In the UK, moreover, many initiatives have been organised at the national level with little attention for specific regional context. In Spain, initiatives have erupted at all levels of government: local, regional and national level. An internal survey of the National Institute for SME Support (IMPI) in the early 90s came to an estimation of around 1000 initiatives, most of which had very limited resources.

Within this context, it does not come as a surprise that observers see the support to SMEs in Aragón and the North East as fragmented and
unstable. In Aragón, support to SMEs is seen as strongly deficient (Hidalgo Arribas, 1995). There have been some successful ventures, such as the establishment of the CEEIA, the European Business and Innovation Centre in Aragón. The CEEIA is a business centre for business start-up environment, offering a wide range of on-site business services, and limited business venture capital, to firms located on the site. In general, however, business support initiatives seem to be to limited in scope and not be able to reach firms effectively.

In the North East, one of the problems is that, due to a proliferation of initiatives and an increased competition between agencies to acquire funding and find ‘customers’ to sign up for new projects, businesses are at least confused or even show signs of ‘support fatigue’. The theme of enterprise support, in particular, has been dispersed among a patchwork of organisations. Although the Training and Enterprise Councils (TECs) were established to play a leading role in enterprise development, so far they have been strongly oriented towards co-ordinating and implementing training activities. Also, support for innovation has been fragmented, organisationally and financially, between various organisations (Charles, 1996). Moreover, the funding regime has created an environment that cultivates short-term initiatives, and a tendency for organisations and individuals in the system to invent constantly new initiatives for which they can take credit. A recent report by the local CBI division thus calls for more stable streams of funding especially to TECs. Summarising the results from an extensive survey among local businesses, the CBI report also revealed that regional bodies were perceived as working well together, something which is recognised and used as an example in other English regions (CBI, 1996). Despite this praise for the support environment, the report concluded:

“[Northern] Companies wished to see a simplified support structure with much more focus towards its customers. Businesses were confused about which organisation to approach for help on specific topics and perceived an overlap in the services provided. They were critical of the bureaucracy they faced and felt agencies should communicate their series more effectively (...) Business would like to see a more coherent structure, providing a more focused, customer oriented and efficient service from easily identifiable services” (CBI, 1996, p.27).

Taking a similar position, the latest PMC research consultation valued the regional technology infrastructure as extensive but complex, which historically has been poorly co-ordinated. It is also recognised however that awareness of these problems and business perceptions has grown and some successful attempts to streamlining support have been undertaken, although much remains to be done in the area of strategic and cohesive action. According to the PMC document, support needs to be repackaged on the basis of closer interaction between providers and business clients and a better and more straightforward funding basis needs to be developed.
One example of co-ordination is offered by the impact of EU programmes such as STRIDE. Under the supervision of the local DTI office, STRIDE was used to pull together various strands of technology support within a common framework, North East Technology Support (NETS) (Charles, 1996). NETS provided a platform for a more strategic approach for technology support to SMEs, and played an integrative role in the applications for ERDF funding in the early 90s. Other bottom-up attempts to develop more co-ordinated approaches in technology support have led to the establishment of various sector-oriented organisations funded under ERDF.

In Aragón, calls for more focus on SME support stem from the local business federation (Hidalgo Arribas, 1995). During the 1990s, CREA has repeatedly urged the local government to pay much more attention to local firms. It is hoped that, with the budget crisis under control and a trend towards more co-operation between IAF, sector organisations and the local and regional business federations, a more effective economic strategy will emerge.

5.1.5. Cluster strategies

Sector and cluster oriented initiatives have become more important in both regions. In both areas there is a strong awareness of the need to develop a strategic vision of future economic specialisation based on cluster or cluster-type approaches. It is the North East that provides the most advanced policies. In Aragón, agencies such as IAF have learnt about clustering especially from the Basque Country and Catalonia, but this has not been captured in its own initiatives. Sectoral approaches are followed in the more conventional sense of supporting selected sectors, such as mechanical engineering, and local agricultural produce (wine, olive, cereals). In the late 80s, three sectoral technology support organisations were established, for wood, metal, and agro-industrial production, but lack of funding has meant that these have not got off the ground. Academic research has pointed to the emergence of manufacturing clusters along the Ebro upstream from Zaragoza, notably in automotive production and electronics (Serrano Sanz & Bandres Moline, 1992). The latter authors even interpreted this clustering as resonating with the developments of industrial districts.

In the case of the North East, sector and cluster ideas were taken up along various routes. An influential document introducing the concept of clustering was the regional economic analysis produced by the Centre for Urban and Regional Development at Newcastle University (CURDS) as part of the PMC documentation. In this analysis, clusters were presented as an opportunity to target firms more effectively, and to exploit the strengths of the higher education system, and hence as a vehicle for the public sector to induce diversification of sectors and the regional economy at large. Although no thorough 'cluster mapping' was undertaken, a list of clusters was proposed which deserved targeting in the authors’ view: energy engineering, environmental goods and services, medical and
healthcare, and marine engineering and services. Only the last cluster presented a long established specialisation in the region, although in need of revival. The other were seen as being able to exploiting existing strengths (engineering), the existence of hub firms (Procter and Gamble, Nissan), or rising market opportunities (environmental demands).

In follow-up briefings, the cluster or sector approaches were seen to play four major roles: (1) the closer involvement of business support in service provision, (2) the selective targeting of support which could therefore be more effective; (3) as a vehicle for collective learning, and as (4) a way to improve networking among local firms. Sector and cluster approaches were thus seen as a means to tailor support packages to the needs of groups of related businesses and the support infrastructure. Such tailoring includes specific start-up assistance, improving access to finance, skill development, provision of common commercial and technical information, networking and associational developments and the creation of awareness among the wider public about the importance of a sector. Finally, at the regional level, CURDS advocated the need for gathering in-depth information on sectoral developments to support targeting of services and economic strategies focused on regional economic specialisation.

As a result of this analysis, clusters (primarily in the sense of clusters-as-targets) became part of the Single Programming Documents as part of the application for EU Objective Two funding in 1992. In a more recent PMC document, sectors were prioritised according to their growth potential (Table 14). Again, this was not based on an in-depth analysis, but reflected general views and assessment by the consultants.

Table 14 Consultants assessment of sectoral prospects in the North East until 2000

<table>
<thead>
<tr>
<th>Potential high growth</th>
<th>Potential moderate growth</th>
<th>Potential low growth</th>
<th>Potential decline</th>
</tr>
</thead>
<tbody>
<tr>
<td>electrical &amp; electronic goods</td>
<td>automotive industry</td>
<td>metal processing etc.</td>
<td>textiles &amp; clothing</td>
</tr>
<tr>
<td>electronic components</td>
<td>food &amp; drink</td>
<td></td>
<td></td>
</tr>
<tr>
<td>offshore engineering pharmaceuticals</td>
<td>knowledge-based industry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>rubber, plastics &amp; packaging</td>
<td>retail-based services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>call centres, back offices services</td>
<td>tourism</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Hall Aitken Ass., 1996.

Another route to clustering is presented by recent changes in NDC. For NDC, the extension of its mission with a ‘adding value’ dimension was accompanied with a stronger sectoral focus. This shift was inspired by trends in its sister organisations in the UK, notably Scottish Enterprise and the Welsh Development Organisation, which had reorganised part of their activities along sectoral lines. Also in England, cities like Leeds and Sheffield presented cases of sectoral approaches (Lagendijk & Charles, 1997). NDC used the sector approach to streamline its own organisation (Table 15). From a task-based organisation broadly divided into ‘business services’ and ‘operations’, an integrated structure is being built in which a
central role is played by business investment managers (BIMs), project teams and the building of sectoral knowledge bases.

Table 15 NDC’s shift to a sector-oriented organisation

<table>
<thead>
<tr>
<th>Old structure</th>
<th>New integrated structure</th>
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</thead>
<tbody>
<tr>
<td><strong>Business services</strong></td>
<td><strong>Operations</strong></td>
</tr>
<tr>
<td>supply chain development</td>
<td>FDI (Triad organisation)</td>
</tr>
<tr>
<td>opportunity brokering</td>
<td>Aftercare (5 persons)</td>
</tr>
<tr>
<td>procurement</td>
<td></td>
</tr>
<tr>
<td>business development managers</td>
<td></td>
</tr>
<tr>
<td>Regional Supply Office</td>
<td></td>
</tr>
<tr>
<td>exhibitions</td>
<td></td>
</tr>
<tr>
<td>missions</td>
<td></td>
</tr>
<tr>
<td><strong>sector based -around investment managers</strong></td>
<td></td>
</tr>
<tr>
<td>market intelligence units</td>
<td>project team (with key players)</td>
</tr>
<tr>
<td></td>
<td>sector knowledge base</td>
</tr>
</tbody>
</table>

Source: NDC

Unlike the strategy documents presented before, NDC’s sector approach is not based on any predefined selection or idea of targeting. In effect, the organisation follows a highly pragmatic approach, developing expertise where and when opportunities (or threats) are perceived. The organisation generally advocates a strategy of diversification rather than specialisation, although services receive little priority. The first sectoral initiatives where developed in those sectors with a strong presence and/or growth in the region: automotive, offshore, food and drink, and electronics. Already in 1987, a joint NDC-DTI initiative led to the establishment of the Northern Offshore Federation (NOF). With 240 members, and a wide range of support and lobby activities, the NOF has become a model sector organisation in the UK. At present, NDC is in the process of setting up a new sectoral organisation targeted on the food and drink industry along the lines of the NOF. In the mid-1990s, also a series of briefs was produced including SWOT-type assessments of the region’s ‘clusters of competitive advantage’, written by internal sector specialists.

For NDC, the business of ‘adding value’ along sector lines is based on one principle: developing supply chains at business level. Supply chains are seen as a major objective of ‘after-care’, as well as the way to create demand for local firms, notably SMEs. Supply chains are thus presented as an answer to the limited results in job direct creation by foreign investors and as a way to anchor foreign firms deeper to the local economy. The organisation acknowledges the fact that, specially in more mature sectors such as automotive and offshore, a process of rationalisation is leading to a reduction and globalisation of supplier links. However, it sees itself in a position where it can offset the negative consequences of these processes through brokering higher levels of local content and by establishing partnership sourcing, thus boosting the position of the region’s indigenous firms. In its own words:

“The overall number is suppliers is likely to be reduced but those that survive are likely to have much greater growth potential. There

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is no reason why the region should not benefit from this process as NDC’s research on supply-chains shows that 80% of major company purchasing is done outside the Region. So, internalising a proportion of this expenditure will more than compensate for any reduction in the total number of suppliers. (...) In crude terms, large firms create output and small firms create jobs. This relationship is reconciled through the supply-chain. (...) a healthy and growing and large-firm sector is essential to the growth of SMEs, from where the bulk of new jobs will come in the future” (NDC, 1997, Pt. 1.3.6-7)

The adoption of sector and cluster concepts by NDC should be seen as an extension and support of, rather than divergence from, its main activity of promoting business investments. Even with a focus on supply chains and more sector-oriented organisations, NDC remains geared towards single firms. Supply chains are developed around the procurement divisions of major companies. Sectoral knowledge is used to acquire more detailed insight into investment opportunities and business developments, and to undertake some 'gap analysis' to support supply chain development. Promotional material from NDC features success stories about business investments and business supply chains. As far as regional and sectoral issues are addressed, NDC endorses the view that competitiveness is achieved by partnerships and co-operation, but its own activities remain restricted to initiatives around supply chains and partnership sourcing. Even in these areas, a narrow interpretation model is adopted. Most of its material produced around the cluster theme closely follows the pyramidal structure of the automotive supply chains, for which a broad distinction is used between low volume, high volume and process industries, and services, rather than more detailed sectoral assessment and foresight.

The message about clustering conveyed as part of the PMC documentation has also been absorbed by business support organisations in the region. Several organisations (Tyneside TEC, ENTRUST, North Tyneside Council) have developed business clustering projects, in which firms form associations to undertake collective marketing and develop other joint strategies. Besides the cluster concept, the inspiration for these initiatives stemmed from ideas on networking and industrial districts. The North Tyneside Real Service Centre, established by the local council, has been particularly successful in bringing SMEs together and in setting an example for other organisations in the region and beyond. Through the ‘clusters’, in particular, SMEs have been able to explore new markets and to acquire a better position in international markets.

In the cluster case studies to follow in the next chapters, three cases will be further explored: two sector-oriented cases, dealing with the automotive and off-shore sectors, and one discussion of the business cluster initiatives, in which the focus will be on the Real Service Centre.

### 5.2. NRW and Hessen

Clustering in German regions has developed against a different background, and based on different incentives and logics compared with Aragón and the North East. In contrast to the rather chaotic British
picture, and the over-articulated Spanish system, Germany consists of a three-tier administrative system (Federal State, Land, communes). These three layers display a relatively coherent and well-structured legislative basis and functional division, based on principles of high levels of autonomy, self-financing and subsidiarity. In larger Länder, such as NRW, co-ordination between the Land and communes is provided by the intermediate level of Regierungsbezirke. The administrative context is not the only reason to discuss these two areas jointly, however. Both areas also share the fact that the position of regions, such as the specific regions to be discussed later in the cluster cases (Bergisches Land, Rhein-Main), is rather ambiguous. Unlike Aragón and the North East, these areas do not have strong regional agencies or exhibit strong regional identities, although regional structures do play a role. Hence, in both cases, the development of regional policies and cluster initiatives has to be understood against the background of the emergence of regionalisation processes in a well-established and tiered administrative system.

5.2.1. Regional policy background

A feature shared by both regions is the profundity of the debate on economic development, not only in academic circles but also among policy-makers, consultants, etc. This debate has been triggered by the common idea that Germany as a whole needs to find new responses to what are perceived as a major ‘global’ threats to its competitiveness and capacity to create wealth and employment. In particular, there is a concern that the economy has got stuck in old routines and activities. So, the search has been on for new, innovative ways of reshaping economic routines and diversifying the economic basis. More than in regions discussed before, the debate has been inspired by ideas on Fordism and flexible specialisation; many authors quote the work of Piore and Sabel as starting point for the discussion on innovation and institutional change (Fürst, 1994; Heinze et al., 1995; Rehfeld, 1995). A core aspect of the debate is the relationship between economic and social-cultural-political developments. One aspect of this relationship involves the question of how social-cultural-political factors play a role in shaping more innovative forms of economic behaviour, which follows from the work of Piore and Sabel as well as thinking on ‘industrial districts’ and ‘innovative milieus’. Another aspect is more ethical: it involves questions of social acceptance of both old (e.g. heavy resource-based production) and new (bio-technology, ICT) activities, which meet high levels of public resistance. The major implication of these concerns is a strong focus on environmental protection and investment in environmental industries.

The debate on innovation and social engagement has been fundamental for stimulating interest and new initiatives in regional industrial policy. Following on the seminal work of Piore and Sabel, as well as other literature on innovative networks and ‘milieus’ (Läpple, 1996; Camagni, 1991), attention has focused on the role of co-operative networks at the regional level. Co-operation between firms (notably SMEs), as well as with public, semi-public and other social actors is seen as the way forward
to raise innovative capacity as well as broad social consensus and hence regional competitiveness (Heinze et al., 1997; Grabher, 1991). Networking, in particular, has been associated with the nurturing of endogenous potential in a ‘bottom-up’ fashion, contrasting with a traditional ‘top-down’ approach of a more ‘dirigiste’ nature. In a more pragmatic way, the combination of networking and regional embedding (in German referred to with one word: Regionale Verflechtung) are also introduced as a response to the perceived threat of relocation, especially by firms in mature sectors such as automotive production (Doleschal, 1991; Born & Rehfeld, 1996). Such threats were fed by revelations by core organisations such as the German automobile producers association VDA. On the basis of a survey among primary suppliers in 1996, VDA forecasted that between 1995 and 2000, 66000 jobs would be shed in Germany while the same firms would create 35000 jobs abroad (Koch & Strutynski, 1996).

In developing these ideas, however, authors have moved away from the original social, some would say ‘romantic’, interpretation central to the work of Piore and Sable, and adopted a more strategic view (Knuth & Latniak, 1991). Exploring the role of strategic factors at the level of firms as well as the region, regional industrial policy was to be based on the co-determined and co-ordinated management of public and private investment to maximise local networking benefits. Other authors have added a more political view, pointing to the rigidities of the political-institutional milieu underpinning regional development, and argued that initiatives should facilitate genuine institutional change and innovation:

[Regional development] is not in the first instance a question of technological improvement. The crux is that organisational, institutional and social innovations support the development and strengthening of regional innovation, supply and marketing networks and the innovation-oriented reorganisation of internal business structures (Läpple, 1996, p.48, my translation)

From advocating regional networking following a more strategic perspective, it was a small step to thinking in terms of production chains and clusters (Rehfeld, 1994a; Heinze et al., 1997; Läpple, 1996). There are some interesting differences to distinguish in the paths towards cluster initiatives between the two areas, which will be further discussed in the next sections.

5.2.2. The institutional context

NRW

Like in the case of the North East, the broad economic situation of NRW, notably the Ruhr area, should be understood against the background of its historic industrialisation process. Before the 19th century, the Ruhr had developed as a well-balanced city system, which was part of the European trade network of Hanson cities. The present economic, as well as basic social and political, structure of the region took shape, to a large extent, in
the second half of the 19th century with the rapid development of coal and steel production. The unprecedented economic expansion manifested by the Ruhr and surrounding areas was secured by growth coalitions consisting of representatives from the large corporations, Chambers of Commerce, the local state and (after recognition of the right of co-determination) unions (Hennings & Kunzmann, 1993; Rehfeld, 1994b). This created a highly effective ‘integrated machine’ for the production and shipping of coal and steel. In technological terms, this ‘machine’ was so successful because of its capacity to transform new technology (initially most coming from England) into high-volume, highly efficient and rational extracting and manufacturing processes. An effective system of technological absorption and development thus supported the growth of the coal-steel cluster. Around this main resource-based cluster, however, also other cluster developed, such as in chemical production, and machine tools and electrical goods.

The 20th century has seen strong growth in the region until the 1960s. Since then, the area has been suffering from what increasingly appeared to be an incurable crisis. What had once been the engine of economic growth, the coal-steel cluster, became a major cause of stagnation when market opportunities declined. Repeated attempts of diversification did not compensate for the losses in the coal-steel sector, although some new activities emerged (Hesse, 1988). The perception of crisis thus became a dominant factor in the development of industrial policies and the shaping of support activities. While other regions had suffered from industrial decline (e.g. the North East), the Ruhrgebiet became the prototype of an ‘old industrial area’. In particular, it was this notion that underpinned the massive inflow of support devoted to combating the area’s economic problems. In many respects, indeed, the Ruhrgebiet, and the Land in general, have become a field of experimentation for policy development. Since the 1960s, NRW shows a impressive sequence of programmes, accompanied with an increasing capacity to learn from failures and to try new directions (Cooke, 1995b).

In the context of this study, the most interesting steps have been the process of regionalisation, the emphasis on networking and the development of targeted regional industrial policy. These themes have only emerged from the mid-80s onwards. Before that, two other phases of economic policy can be distinguished (Table 16)

- The 60s and 70s were characterised by support to the dominant industries, based on the belief that they suffered from cyclical, not structural, problems. The aim was re-industrialisation (Ache, 1996).
- The 1980s brought a shift to more comprehensive approaches aiming at industrial diversification (neo-industrialisation), with increased emphasis on technology development, SMEs and environmental protection.

While the latter phase presented a substantial move away from the tradition of supporting and protecting the ‘losers’, and managed to induce some further diversification, it did not seem to reach the heart of the
economic stagnation in the area. One problem was that policy-makers preferred routine solutions, neglecting the specific circumstances in which policies had to be implemented. Moreover, a large amount of resources was spent on direct subsidies to firms. According to some observers, this primarily resulted in an increased dependence of firms on subsidy provision (Hesse, 1988).

More fundamentally, policies were based essentially on the assumption that the crisis in the area stemmed from the dominance of mature industries, and that a solution had to be found in reducing this dominance by managing industrial diversification combined with rationalisation of the large businesses under threat. One way restructuring was managed was by aligning, as far as possible, the diversification strategies of the major corporations. While some modest success was made in creating a more diversified economy in this way, critical observers such as Läpple and Grabher argue that the area's principal problem has been not so much the industrial structure but the nature of networks and 'milieu'. In Grabher's view, economic development has been blocked by the nature of inter-firm relationships. The Ruhr suffers from rigid specialisation based on rigid hierarchical firm relationships, which impede change and stifle the development of supply chains (Grabher, 1991). Läpple describes the area's production milieu as pre-Fordist, which can be characterised as follows:

“economic as well as non-economic dominance of vertically integrated large businesses, which maintain almost feudal dependency relations with suppliers, a technical culture oriented to mass technology, a spatial and locational structure geared towards the functions of the established mass-technological production and transport system (…), as well as a 'cartel mentality' evolving into a regular corporatism (…)' (Läpple, 1996, p. 46, my translation).
<table>
<thead>
<tr>
<th>Time</th>
<th>Programme</th>
<th>DM</th>
<th>Description</th>
<th>Brief perspective and outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>68-73</td>
<td>Ruhr Development Programme (EPR)</td>
<td>3.7  Bn</td>
<td>Support to existing industries and general infrastructure (‘re-industrialisation’)</td>
<td>Conceived economic problems as largely cyclical not structural</td>
</tr>
<tr>
<td>70-75</td>
<td>North Rhine Westphalia Programme</td>
<td>31.0 Bn</td>
<td>Land-wide co-ordinative programme as follow-up of Ruhr programme; additional ‘growth pole’ initiatives</td>
<td>Successful and innovative in developing and implementing existing policies; but did not abate the economic crisis</td>
</tr>
<tr>
<td>80-84</td>
<td>Ruhr Action Programme (APR) (following from the 1979 Ruhr Conference)</td>
<td>6.9  Bn</td>
<td>Aimed at structural diversification (‘Neo-industrialisation’) through labour market programme, promotion innovation and technology transfer (particularly to SMEs), urban development, environmental protection, cultural activities and local infrastructure investments.</td>
<td>Most objectives realised; spectacular success in acquisition of research institutes; but did not rally avoid massive assistance to large firms and tackle the problem of ‘subsidy dependence’; some resistance to stricter environmental regulation; complexities of programme implementation not always recognised.</td>
</tr>
<tr>
<td>84</td>
<td>North Rhine Westphalian Initiative for Future Technologies</td>
<td>1.0  Bn</td>
<td>Stocktaking initiative to develop new technologies with 4 points of emphasis: - developing environmental, energy, micro-electronic, bio-technology, ICT etc. - social acceptance (SoTech) - technology transfer (favouring SMEs) - top-level research (notably engineering)</td>
<td>Launching of various successful initiative and partnerships to promote new technology and create a social dialogue; but some disillusion in technology transfer due to difficulties with reaching SMEs; university slow in moving away from traditional focus on basic research; more generally: programmes hampered by administrative fragmentation and lack of customisation to specific regional/social circumstances</td>
</tr>
<tr>
<td>87-91</td>
<td>Future Initiative for Coal &amp; Steel Regions (ZIM) (facilitation)</td>
<td>1.0  Bn</td>
<td>Initiative to co-ordinate and facilitate ‘bottom-up’ regional development programmes in designated Ruhr areas, impacting upon the ‘soft’ dimensions of regional development.</td>
<td>Seen as an effective approach by the Land, more time required for effects to be fully realised; followed up by ZIN (expenses cover co-ordination only; project finance draw from separate budgets via the Land)</td>
</tr>
<tr>
<td>89-90</td>
<td>Future Initiative for NRW Regions (ZIN)/ Regional Development Concepts ‘REKs’</td>
<td>1.0  Bn</td>
<td>Land-wide application of ZIN in 15 regions</td>
<td>Few cases of successful co-operation and strategy formulation (e.g. Dortmund, Bergisches Land) resulting in various cluster initiatives; but no genuine devolution of competencies and resources, artificial spatial demarcations.</td>
</tr>
<tr>
<td>89-98</td>
<td>International Building Exhibition (IBA)</td>
<td>1.0  Bn</td>
<td>Sectoral, technological, educational and social renewal in a framework of industrial land regeneration using similar collaborative approach as ZIN</td>
<td>Innovative and successful in realising its practical and developmental objectives, due to concrete nature of projects and relative independence.</td>
</tr>
</tbody>
</table>

Source: Hesse & Schlieper, 1988; Ache, 1996 and see text.
According to these accounts, the crux of economic renewal is changing perceptions, attitudes, inter-firm networking and power relationships. The aim of structural policy should be to shift from a historic constellation to a strategic constellation, not only in an economic but also social, cultural and political sense. This was not only a message for dominant business actors but also for political actors. In their historical analysis of industrial policy, Hesse and Schlieper (1988) observe that, ironically, although the 70s and 80s had seen an adoption of “extremely vigorous ideologies of innovation, which seek to transform a traditional industrial area into a hi-tech area overnight”, the real practice of policy design and implementation was far from innovative (1988, p. 564):

“it is almost indispensable to mention the limited innovation potential (innovation stalemate) among those involved. According to these arguments, the organisations are too inflexible, the policies too routinised, the process of decision-making too entangled” Hesse & Schlieper, 1988, p.564.

In the mid-80s a new policy approach emerged which tried to address some of these criticism. The ‘Future Initiatives’ such as ZIM and ZIN (see Table 16) did not present new top-down programmes, but new approaches to the co-ordination and implementation of existing policies. The new aims were to mobilise local actors in the design of economic development strategies and in the design of policy packages on a consensus and ‘self-help’ basis, to promote ‘bottom-up’ innovative approaches exploiting indigenous potential, and to increase the role of public-private partnerships. Against what was seen as the former paternalistic approach to structural policy, the new initiatives were based on the principles of regionalisation and decentralisation, grafted strongly on ideas about regional networking and associational trends. Besides academic debate, a major advocate of the regionalisation approach had been the trade unions, particularly the union-supported consultancy ISA, which had found inspiration in similar approaches in Baden-Württemberg (developed by the sister organisation IMU; see Iwer & Rehberg, 1994). The unions saw cluster strategies as a suitable way to secure jobs.

To facilitate networking and consensus building, the Future Initiatives created Regional Conferences in which representatives from regional organisations engaged in strategy formulation and the prioritising of projects. In essence, the aim of these conferences was “to institute new procedures. In the course of a long term process, arrangements resembling networks which transcend hierarchies and formal departments are to remove institutional as well as mental barriers of social change.” (Fürst & Kilper, 1995, p.288). The Conferences are prepared by a Steering group, with chief representatives from towns and districts, directors of Chambers of Commerce and other dominant regional organisations, and supported by working groups. In the early 1990s, when the funding to ZIN stopped (partly because resources were shifted to East Germany), support was given to the development of Regional Development Concepts (REKs), which laid down the ideas and suggestions resulting from the Regional Conferences.
The Future Initiatives are important since they reflect a genuine re­orientation of policy making using new insights into the role of networking at the regional level (and as will be shown later, for the development of cluster projects). They are not only based on a philosophy of innovation and economic change, but also embody innovation and institutional change themselves. Instituting these steps has been an achievement in itself:

“(…) the [ZIM] initiative may be said to be a success since it has stimulated tow significant and promising institutional changes. First, it has made public-sector led private-public partnerships acceptable where they previously were rejected, especially by local governments. Second, it has produced new growth coalitions centred on small- and medium-sized high firms, regional universities and the more dynamic local government managers. Both innovations stand in stark contrast to the previous efforts to conserve the traditional coal and steel industries.” (Hennings & Kunzmann, 1993, p.48)

Because of their (presumed) innovative character, the Future Initiatives have been subject to various inquiries and debates. Some observers share the positive tone of the conclusion above, and see them as models for other regions (see for instance Cooke, 1995b). Others have pointed at the weaker points of the approach, arguing that, in the end, the Initiatives have not managed to meet their objectives. Fürst and Kilper (1995), using a policy network perspective in analysing Regional Conferences, found that the conferences did not really manage to instil new forms of co-operation between local actors. On the position of two key public actors, the Land and Local Authorities, for instance, they conclude:

”As far as local authorities are represented institutionally in the Regional Conferences (…), they pursue institutional self-interests rather than collective goods of the region. In spite of the internal co­ordination arrangements, the Land administration is not very open to ‘co-ordination from below’ through the regional consensus. Rather, the land administrations still performs through traditional procedures of appropriations” (p. 296)

The authors also point out several other weaknesses. In as much as the Initiatives create innovative impulses, this appears to be a matter of chance rather than being structurally embedded in the overall approach. There are no systematic approaches or financial support for creating awareness and co-operation. Finally, no proper thought is given as to how to move from an experimental phase, in which the governance of the initiatives is based on occasional Conferences, to a more permanent structure, in which a statutory regional body may be required.

Other authors have even been more critical, challenging the presumed innovative character of the initiatives and the impact of regionalisation. One problem is that, although the Conferences bring together representatives from many organisations (summoned by the Regional Commissioner in consultation with key regional actors), the influence of different actors may vary widely. In the end, many Conferences tended to be dominated by the most established, powerful organisations. Waniek (1993, p.472) thus questions the innovative potential of the ZINs: “Instead
of working out innovative development approaches, the regional conferences may be in danger of preserving existing economic and political structures at the expense of future economic development”. Another issue is the regional structure. Being based largely on the administrative Chambers of Commerce areas, the regions do not present ‘natural’ regions (Huggins & Thomalla, 1995). According to Wanniek this has many negative consequences: it may give rise to unwanted inter-regional interference; it makes it more difficult to find a coherent and committed group of network partners, and may impede genuine tailoring of policies to local problems. These points of doubt were, to a certain extent, proven right during the formulation of the Regional Development Concepts in the first half of the 1990s. Some of the Regional Development Concepts were of high quality and offered a good basis for further co-operative work (such as in the Bergisches Land - to be discussed later); others failed both in presentation and follow-up (this happened for instance in Bochum, Duisburg, Dortmund, Mühlheim-Essen, and Düsseldorf).

Nevertheless, although their direct impact has clearly been of a varying, and perhaps sometimes disappointing, nature, the Future Initiatives have been important channels through which messages of regionalisation and networking have been conveyed throughout the Land. Besides the Future Initiatives, the Land government has initiated other programmes oriented on networking, at different spatial levels, as part of its recent ‘Impulse of ). Examples are the networking initiative in the automotive industry (VIA) and ICT sector (MEDIA) (Ache, 1996). For research as well as the management and implementation of projects, the Land government makes more and more use of consultants. This is expected to increase efficiency and promotion of the projects, and has been a major factor in the growth of professional services in the regional development business.

**Hessen**

Hessen has followed a different development path. Before industrialisation, the southern part of the Land, notably the Rhein-Main area had already become an important transport and trade hub, providing the basis for the present dominance of Frankfurt in fairs, finance and business services. The industrialisation process was partly initiated from the craft-based Chambers of Industry and Commerce, which became influential in the last century (Dünzl, 1995). Moreover, a rapid and extensive development of a comprehensive educational system in the area led to a strong improvement in the quality of labour supply, as well as to enhanced innovative capacity. While English inventions, notably the steam engine, triggered the first steps to industrialisation, it was a generation of local scientists-entrepreneurs who laid the foundation for the growth of local expertise in metal engineering (notably machine tools and transport goods), chemical production and electrical goods. Particularly in chemical production, a close integration of science, industrial technical development and commerce emerged. While these sectors were initially characterised by small, entrepreneurial firms, consolidation through mergers and
acquisitions led to the rise and increased dominance of large firms such as Hoechst and Opel.

The 20th century has been a period primarily of diversification into non-industrial sectors. In fact, the industrial profile of Rhein-Main has not undergone much change since 1914, keeping its orientation towards metal, chemical production and electrical goods. In the last decade, some sectors, especially in automotive production and bulk chemical products, have faced difficulties and induced a process of rationalisation, notably through shedding and moving out of employment. The main non-industrial growth sectors have been finance and producer services, with a strong concentration in Frankfurt and surrounding business parks (particularly around the airport). This trend towards centralisation has forced industrial activities further out of the region’s economic core areas.

The success of the region’s service sector, however, does not receive an unqualified applause. On the contrary, a major issue in the economic development is the overall economic profile of the region. Should Rhein-Main concentrate on strengthening its function as global hub of business services, or should it try to keep a balance between industry and services? In effect, many regional development agents and observes advocate the latter. Krüger-Röth and Kania (1995), representing two leading development organisations in the region (Umlandverband - the regional co-operative body in economic development established in 1974, and the Frankfurt Development Agency), consider the relationships between industry and services as an essential component of the region’s competitiveness. They fear that the present industrial downturn, small as it may be, may induce an unravelling of the region’s vital economic networks and induce more re-location. It is this perception, shared among many local policy-makers and researchers, that has supported the promotion of ideas on regional networking and specific initiatives promoting industrial development, from mature sectors to new hi-tech growth sectors. The latter has been strongly endorsed by Krüger-Röth and Kania, especially at the level of the region:

To remain competitive amongst Europe’s regions, the Rhein-Main region needs to act-as-one and market its locational advantages attractively (...) Due to the increased necessity to co-operate closely with service providers, suppliers and science institutions, spatial requirements can hardly be met at a communal level (Krüger-Röth & Kania, 1995, p.469, my translation).

The recommendations to secure the role of cross-sectoral networking and promote the region-wide locational advantages are supported by a study carried out by ISI (Koschatzky et al., 1996), commissioned by the Umlandverband. The study explored the supply linkages among and between a selected group of industrial and service companies. Not unexpectedly, the findings indicated that sourcing patterns tended to become more global, although growth in the total volume of increased outsourcing by larger firms meant that demand for local supplies was not diminishing in absolute terms. Nevertheless, there was a growing fear that
the region was threatened by a decline in local economic embedding. This led to calls for more co-operation between businesses and with local organisations.

In its search for opportunities for co-operation, the *Fraunhofer-Institut* study pointed at the differences between industrial and service sectors. In most industrial sectors, many firms, especially older, established ones with local decision-making capacity, maintained relatively high levels of local sourcing. However, local sourcing often did not mean local production, but only that the purchasing and service provision went through a local firm or branch. In services, in contrast, local subcontracting and networking were becoming more important as means to compose more complex products by combining the core competencies of a range of businesses. The market for these products was largely extra-regional. Finally, on industry-service linkages, a rather ambiguous picture emerged. On the one hand, the study confirmed the region’s leading role in business services, and its strong position in service export. On the other hand, further reduction in industrial production is seen as a threat especially for the suppliers of more standardised services. The recommendations thus included the set-up of regional exchange systems for physical goods, e.g. in the waste sector, accompanied by resource management services. In a broader sense, more attention to ‘after-care’ for established firms was endorsed combined with a coherent spatial planning policy (notably in transport and site provision). The environmental sector was suggested as a first angle to create a regional network-based development strategy geared towards hi-tech ‘value added’ production.

The authors stress that their recommendations bring two new dimensions to economic policy in the area:

New is that the region-as-one articulates, more than in the past, its competitive strengths, and transforms them into concrete ideas of its position in the international division of labour. These strengths involve transport logistics, service provision (not only banking), technological competencies and the future orientation resulting from these locational conditions. Also new is that this strategy should encourage industrial and service companies to extent their co-operative links to other forms, to acquire more qualifications, to expand their competencies and to increase the synergy between different fields of technology more than done so far. (Koschatzky et al., 1996).

While this study (and other related material) presents an impressive account of support and suggestions for a regional networking approach, in one respect the approach differs markedly from recent developments in NRW. Apart from a reference to the need to act-as-one, and, indeed, on the last page a one-line suggestion to establish something like “Future Dialogue Rhein Main”, little is said, as yet, about institutional change and innovation. This should not so much be perceived as a point of weakness, however, but as reflecting the specific stage of development in which regional policy finds itself here. The dominant objective so far has been to
demonstrate the value of regional strategies, while institutional change and developments will have to follow.

5.2.3. Regional policy development and accountability

Where substantial parts of the implementation of public policy in Britain is undertaken by semi-private organisations with low levels of accountability, in Germany accountability, both operational and financial, is a highly sensitive policy issue. Historically, industrial policy has been developed and controlled in a strongly regulated tri-partite corporatist governance framework, with representatives from the state, labour and business. The 80s brought the first sign of change, brought about by an emerging neo-liberal thinking and, more important, a political swing to the right. A major result was the development of what Heinze and Schmid (1994) call new forms of ‘meso-corporatism’. These institutional forms consist of weak (facilitating, supportive) regulatory instruments oriented to improving the supply side of the economy. They are often developed and managed by customised governance structures, of a ‘self-help’ nature and often involving professional organisations such as consultancies. These shifts are generally justified on grounds of greater local fitness and efficiency (Waniek, 1993). In broad political terms, meso-corporatism presents a break with the traditional tri-partite model. New policies are increasingly forged on an alliance between business and the state, and while the role of unions and other social interest group tends to be more marginalised.

At the regional level, the tendency towards meso-corporatism was linked to new ideas about networking and collaboration, and with the wish to be more innovative and flexible in policy design and implementation. New initiatives thus grew out of alliances between business associations and public authorities, with little or no say for the unions. It became commonplace to contract out to consultancies the implementation of new initiatives, and sometimes even major parts of policy design. A more complex world thus emerged, with a stronger impact of the private business sector. Over the last decade, however, unions have also tried to regain some of the lost ground by launching their own initiatives, often through establishing union-controlled private consultancies (such as ISA and IMU). In some Länder, such as NRW, this has even led to new alliances between public authorities and unions. As will be shown in the case studies, the result has been that in some policy areas, including that of clusters, parallel initiatives have emerged, with one strand more business-oriented, and another strand based on union involvement.

Increased emphasis on experimentation, networking, and involvement of third parties in policy implementation, has triggered questions about policy monitoring and accountability. Formally, the division of responsibilities has been clearly articulated, and final control remains in the hands of the public sector. It is clear, nevertheless, that much of the daily monitoring takes place at the level of policy networks and third parties, generating higher levels of self-monitoring. Under what conditions does such a governance structure facilitate genuine innovation and improved effectiveness? To
address this issue, Heinze and Schmid (1994) relate the concept of meso-corporatism to Sabel's idea of 'learning by monitoring'. From Sabel's conceptualisation, the authors conclude that that effective process of self-monitoring require strong commitment and flexibility:

(...) 'learning by monitoring' involves a complex process of learning, a highly appealing discursive approach, which not only presumes intensive commitment from all participants, but for its realisation also needs to overcome extremely high barriers of individual interests (Heinze et al., 1997, p. 261, my translation).

Without such commitment, decision-making within network-based governance forms runs the risk of reflecting vested interests, and may even, because of less external control, reinforce parochial attitudes (Knuth & Latniak, 1991). Conservative, and non-innovative approaches may thus persevere, protecting the status quo and preventing the establishment of new forms of learning and reflexivity.

Developments in industrial policy in NRW actually illustrate some of these caveats. Already in the early 1990s, Hennings and Kunzmann claimed that, in effect, not much has changed since the 1980s despite Conservative rule and erosion of Keynesian thinking:

Although the change from a Keynesian to a more free market-oriented economic policy made slogans like 'market orientation', deregulation', 'flexibility', or 'privatisation' more popular, the local level was hardly touched by this change. Despite some efforts to introduce entrepreneurial zones, to promote the entrepreneurial city, and to deregulate the comprehensive planning and environmental legislation, little changed (Hennings & Kunzmann, 1993, p.40).

More specifically, ZIN was criticised for lacking an appropriate governance structure, and especially for the ambivalent way different aspects of the Initiatives have been managed. While the phase of strategy formulation and project planning was decentralised, the application for funding and the implementation process were still centrally controlled. In essence, ZIN funding works via a complex cascade model of applications and selection through various Land ministries, which thus retain full financial control. In the words of Waniek:

"ZIN contains a fundamental contradiction: on the one hand, Government wants to reduce its responsibilities for regional development on efficiency grounds, whilst, on the other, retaining its right to take the final decision about regional projects and their funding." (Waniek, 1993, p.470)

It should be added however that these comments, however useful, reflect the observations of what can be seen as critical insiders. Relative to other areas, NRW has manifested an unparalleled level of progressiveness and resilience in its policy development. To quote a British observer:

"To the extent NRW regional industrial policy can be said to have shown success, it can be traced to a, perhaps 20 year, period of learning by doing, seeking ways forward from within the framework of innovative opportunities offered within the declining industries
themselves. This demands a tremendous capacity for association, consultation, discourse, and willingness to engage with other interests. It is slow, painstaking but inclusive thus less likely to generate opposition from ‘excluded others’” (Cooke, 1995b, p.239)

In this respect, regional ventures in Hessen show a different pattern. Many initiatives have been launched by a patchwork of organisations in the area of business support, technology and networking, between which co-ordination is often lacking. Despite efforts to strengthen unitary governance at the regional level, especially in Rhein-Main, the plea to ‘act-as-one’ has met stiff resistance from local actors. A fall in interest from the more suburban areas in the Rhein Main region has even threatened the survival of the *Umlandverband*. In this sense, the area differs sharply from NRW, where, despite all the difficulties, networking initiatives and regionalisation have received considerable support and commitment. It also contrasts with other more similar areas, such as Hanover and Stuttgart, where statutory regional structures (and governing bodies) have been established.

5.2.4. Orientation to SMEs

As in other areas, support for SMEs has grown rapidly both in Hessen and NRW. Besides general issues of start-ups and business development, two themes are prominent in the attention for SMEs: technology and cooperation. The first interest in these themes stemmed from the debate on flexible specialisation. In particular the work of Piore and Sabel, with their emphasis on the emergence of flexible, small firms’ networks, was seen as bringing the ‘most promising model for sustainable regional development’ even for areas such as NRW. Against the background of an alleged demise of ‘Fordist’ style production and consumption, SMEs were seen as superior in innovation and flexibility, and thus the new pillars of competitiveness. In the German context, evidence for this thesis was found in those areas where the typical ‘Mittelstand’ was seen as most innovative and interactive, such as Baden-Württemberg (Gertler, 1996).

Unlike Baden-Württemberg, the economy of NRW has traditionally been dominated by large firms. According to Grabher (1991), this should be attributed to long-lasting social and cultural factors. Even before the large-scale coal and steel became dominant, the area lacked a proper environment for SME development and networking. Grabher thus sees the high level of vertical integration and domination by the large corporation a result from, as much as cause of, the weakness of SMEs. In Hessen, SMEs have traditionally had a stronger role in the economy, although waves of mergers and consolidation meant that many parts of the economy have also become dominated by large firms. In the core area of Rhein-Main, it is especially the business service sector in which the strongest SMEs have emerged.

Initial SME support was focused largely on technology transfer in deprived areas such as the Ruhr. Through the 1980s, due to the early and massive financial support, NRW developed one of the densest networks of
technology support in Germany and beyond. In 1993, the Land housed around 40% of the technology development and transfer institutions (Rehfeld, 1994b). In the same period, an attempt was made to make the support system more coherent and transparent, through the establishment of the Network Technology Infrastructure.

Hessen has a much weaker support system, which is partly due to its past economic growth and its service-oriented economy. Unlike NRW, the Land has no tradition of subsidy provision and has not launched any comprehensive technology programme. Nevertheless, in the 1990s, major support organisations such as the Umlandverband have launched a campaign for the strengthening of the technological profile of Rhein-Main region, based on various studies on the technological potential of the region (for summary see Koschatzky & Breiner, 1993). It was recommended the region should become a major centre for hi-tech activities, with emphasis on four sectors: ICT (with strong links to the service sector); robotics and other product/process techniques; measurement equipment and instruments; and the environmental sector (Krüger-Röth & Kania, 1995).

To what extent have SMEs benefited from technology support? As indicated before, the general evidence on this issue is not very positive. Most significantly, the ‘technology push’ model underpinning the traditional technology transfer policies did not suit the reality of most SMEs. This picture is corroborated by the German areas. In NRW, Rehfeld observes, firms tend to stick to the practices learnt largely ‘by

Small and medium sized firms hesitate to give up their long practice of muddling through which is based on an organisation of production and work that was successful in the past (Rehfeld, 1994b, p.235).

Although there are various success stories of technology centres with strong links with small firms - often institutionalised in the form of public-private partnerships - the overall reach of the support system has been feeble and take-up low. Summarising various studies and evaluations, Davis (1993) thus concludes that the investments in technological support have resulted largely in upgrading the regional scientific base rather than improving business performance. Other authors, moreover, argue that despite the variety of organisations, levels of specialisation are still inadequate (Rehfeld, 1994b; Ache, 1996). This presents, in a way, a more serious problem than the problems of co-ordination and transparency.

Although with less history and intensity, Hessen shows similar problems. Technology evaluations have demonstrated the large potential of the region, through the presence of many hi-tech SMEs, a highly qualified science sector, and an extensive technology transfer capacity. However, they also reveal very low and poor levels of interaction (Krüger-Röth & Kania, 1995). Some attempts have been made to create an overarching structure of technology support, initiated by the Land Technology Institute (Hessische Technologiestiftung) and inspired by the Steinbeis organisation in Baden-Württemberg. Establishing real integration however has proven
to be extremely difficult, since it meets stiff resistance from organisation not prepared to give up (part of) their own identity (iv1).

Where technology support was inspired by the concepts of ‘flexible specialisation’, ‘innovation networks’ and/or ‘innovative milieus’, new initiatives also stressed the importance of nurturing co-operation between firms (Semlinger, 1998). Co-operation is interpreted in rather different ways, however. Closest to the Piore and Sabel approach are the ideas on changing the business culture, bringing small firms together to overcome petty rivalry and destructive forms of competition (Grabher, 1991; Rehfeld, 1994b). Co-operation is also linked to supply chains and other industrial configurations involving large(r) firms. Rather than emphasising the small-large firm divide, these approaches acknowledged the continuing role of large firms as market and technology ‘gatekeepers’ and as subcontracting hubs. With less emphasis on technology, co-operation is also interpreted as facilitating the meeting of (excess) supply and (unsatisfied) through a kind of exchange point. The latter has been developed by Chambers of Commerce, at federal as well as regional levels through ‘Co-operation Exchanges’. Also in a more pragmatic sense, co-operation is associated with inducing processes of inter-firm learning. In the case of Hessen technology support, inter-firm learning was seen as most effective when it involved more secondary, less strategic aspects of business development, such as certification and quality management. Innovation was seen as a more difficult object because of the sensitivities involved (iv).

5.2.5. Cluster strategies

From the discussion so far it will not come as a surprise that the concept of clusters has received much interest among policy-makers as well as academics in both NRW and Hessen. In NRW, thinking in terms of clusters has been propagated by the Institut Arbeit und Technik, particularly by Dieter Rehfeld. The Institut Arbeit und Technik is a Land-funded research organisation with a mandate to improve the application of academic knowledge in areas of technological development and employment at a strategic level. Since its establishment in 1988 (as part of the wider Science Centrum in Gelsenkirchen), it has become a major driver behind innovative approaches to economic development, including various cluster projects.

Rehfeld’s interpretation of clusters is based on the production chain: clusters are based on ‘spatial thickening’ of production relations (Rehfeld, 1994a). He thus endorses a view in which, although production chains may continue to exist, their spatial integration may unravel. Disintegration can be caused by various factors: technical shifts, organisational shifts in supply relations or a more ‘global’ orientation of regional firms. The Ruhr is presented as an area where a dominant cluster (steel-coal) disintegrated by a combination of these factors. What the area requires is a process in

1 Interview communication; see Table 2
which new activities are created by anchoring growth and employment-generating production chains into the area. In such a structural perspective, clusters thus have two faces:

“Production clusters point at two directions. On the one hand, they contribute to regional growth through their dynamism, while, on the other hand, when the production chain loses its integrated economic structure, they may induce a crisis with widespread social and political consequences.” (Rehfeld, 1994a, p.198)

Supporting new clusters is not the only response to structural difficulties, however. Cluster strategies can also be used to give new directions and counter processes of disintegration in ‘old’ clusters. An example is the automotive sector, and a case where such a strategy has been successful is in Südostniedersachsen, where much support was received from Volkswagen. Resonating the socio-political discourse on the development of the Ruhr area, Rehfeld also stresses that economic restructuring strategies not only pose an economic problem, but raise fundamental questions about the fitness of political and socio-cultural routines and strategies.

Following a similar line of thought is Dieter Läpple who, already in the 1980s, advocated the cluster concept in his thinking on the ‘local-global’ nexus (see Läpple, 1991). Läpple sees a close association between the cluster concept and the notion of a regional milieu.

A highly useful chain between branch and milieu is the concept of regional clusters (...). The cluster concepts leads to a replacement of the traditional ‘top-down’ approach based on macro-economic branches and sectors (...) by a ‘bottom-up’ approach. The latter recognises the specific, historically grown production and value-added structures in the region, inter-firm linkages and contacts and the dominant business strategies and concepts. (...) Regional clusters are, in a sense, the interface between the macroscopic, and hence ultimately global, branches and the regional milieu (Läpple, 1996, p.44, my translation).

All authors invoke Porter in their explanation of clusters. It is clear, nevertheless, that a much more social interpretation of clusters is given, with a particular focus on the link between innovation and co-operation. This specific (re)interpretation of Porter’s original concept is illustrated by the following quote:

In this comparative studies, Porter (...) developed a model that comes very close to this understanding of modern and co-operative innovation processes (...) For regional innovative capacity is the economic dynamic, encompassed by such clusters, of crucial importance. Competitive branches can pull related or supporting branches, sustaining the operation of the clusters through external effects, infrastructure etc, and thus creating links for other competitive sectors. (Heinze et al., 1997, p.258, my translation)

In the Rhein-Main area, the concept of cluster has been invoked primarily in the context of the debate on the position of industry in this service-rich
area. Clusters are used to endorse the idea that, through supporting industry-service linkages, core economic activities will be tied more strongly to the region. This again corresponds to the notion that businesses forming part of regional clusters will be less tempted to relocate and take employment away:

"On the basis of the present state of knowledge, we believe that, despite increased business mobility and development in ICT, the spatial relationships between firms play a significant role. Also in the future many orders for industrial supplies and services will be placed locally. Hence, the regional network is at risk when one sector moves out, as manufacturing at present. Yet, following Michael Porter, such 'production clusters' present a critical factor in the regional competitive position. There is, likewise, a close relationship between the employment dynamics in industry and services." (Krüger-Röth & Kania, 1995, p. 467-8)

As in previous cases, the main perspective presented here is that of clusters-as-targets, although with a strong variation in coverage and approach. As will be shown below, some cluster initiatives involve linking firms within single sectors or improving links between two industries (such as the chemical industry and waste disposal), others involve more encompassing approaches based on regional cluster maps. Some references can also be found to clusters-as-method, for instance in the call for more specialisation in the technology support infrastructure in NRW. In addition, sectoral organisations have been developed in both regions, which may turn into genuine 'real service' centres. In the mid-1990s, sectoral support institutions have been established (ZIUs) which have received five years subsidy. The intention is that they become self-financing after this period.

To illustrate the variation in cluster initiatives, the remainder of this will give a brief overview of cluster initiatives in the two areas.

Clustering in environmental production: in both NRW and Hessen the environmental sector is presented as an activity with major opportunities, which may benefit in particular from linkages with chemical industry and heavy engineering but also the transport sector, consumer goods, etc. Moreover, besides a strong social and political acceptance, this presents a sector with a high level of complexity, heterogeneity, and technology intensity which combines both industrial and service activities. It is also a sector in which, due to the importance of regulation as well as the public procurement, the relations between the private and public sector play a crucial role.

Since the first developments in the 1960s, NRW, and the Ruhr in particular, has become a major concentration of environmental production. In 1994, NRW contained about one-third of all environmental businesses in Germany (Rehfeld, 1995). This specialisation may be attributed to several reasons. First, the high level of public support to the sector, e.g. subsidies, technology support, procurement. In effect, more than half of investments in environment protection has been made directly by the
public sector, primarily by Local Authorities. Second, the concentration of heavy industry, which enabled ‘problem-makers’ to become ‘problem-solvers’. Third, the acceptance by firms - although only after a period of resistance - to face stricter environmental regulation to build up competencies pre-empting regulatory changes elsewhere. Finally, the tradition of co-operation between the public and private sector in the area (especially the Ruhr), which facilitated the necessary interaction between the two sectors, as well as with other organisations such as universities (Davis, 1993).

The growth of the environmental sector has created new opportunities especially for SMEs, for instance by creating a market for consultants and providing clients for the innovation agencies (Van Essen, 1997). The sector requires a wide variety of capabilities, which are not likely to be integrated by larger companies. Nevertheless, the large firms remain vital as lead users and core lobbyists. The issue of dependency between small and large firms, and the culture in which supplier relations develop, continues to warrant attention. A related issue is the still poor level of innovation and management capacities in the SME sector (Rehfeld, 1995). An initiative that has tried to address these issues is the Projekt Chemische Industrie im Bergischen Land, which will be further explored in the case studies below.

Clustering in the automotive sector: The fate of the automotive sector presents in both regions (as in many German regions) a very sensitive issue. Both regions have concentrations of automotive producers, notably smaller suppliers. In both regions, these firms have gone through a period of rationalisation and still face a difficult future. NRW, in particular, is an area with a traditional specialisation in producing relatively standard automotive components (Doleschal, 1991). This is one of the reasons why the area has incurred considerably more losses than for instance Bayern and Baden-Württemberg. The typical NRW supplier is second-tier or marginal first-tier, more a technological follower than protagonist, and wary of co-operation. According to Doleschal, they tend respond to new circumstances individually rather than collectively, and chose to relocate rather than explore local solutions. Together with technological weakness, this point has inspired various initiatives such as VIA-NRW.

Clustering in the ICT and media sector: Considered as global growth sectors, and as activities underpinning the competitiveness of other sectors, media and ICT have received much attention. In NRW, several reports have been produced on the media sector, with the specific aim to show the opportunities and overcome the image as media only presenting a ‘cost’ factor. Policy-makers and other actors often have a poor image of the media sector, while they are slow in understanding the significance of ICT. Media was also presented as an activity range dominated by small creative firms, which operate in locally rooted networks, thus reviving the idea of small firm districts. In NRW, where the Land government has been especially interested in developing media clusters, various initiatives have been developed. While ambitions have run high, not all of these have been
successful; the most prominent case with a considerable level of success is the Cologne Media Park (e.g. see Huggins & Thomalla, 1995).

**Traditional industrial sectors in NRW:** A range of initiatives has been developed by the union-related consultancy ISA in the context of ZIN/REK. Since the early 1990s ISA has advocated branch-specific policies as part of regional structural policies, in which it pursued a strong involvement of employees. The projects start with research and the writing of branch reports, followed by the phase of consultation and strategy development geared towards promoting co-operation. Examples of ISA projects are: wood and furniture in Ost-Westfalen, cement industry in Münster, pulp-paper industry in Aachen, door and window furniture industry in Mettmann. A specific supply chain approach is followed in the case of lock/fastener automotive suppliers in Velbert (Bergisches Land) as part of the trend towards electronic systems. A co-operation project in textiles in Mönchen Gladbach failed because of resistance from the firms, which is attributed to cultural obstacles to co-operative behaviour.

The union initiative should be seen as a response to the break-up of the traditional corporatist approach, in which labour was secured a say in most forms of policy-making. Many new approaches, such as VIA-NRW, however, are based on partnerships in which only business and the public sector participate, in a ‘meso corporatist’ fashion. Although the union initiatives have received some support, particularly from the Land government, developing its own regional strategies has not turned out to be an easy affair for ISA. Not surprisingly, businesses have responded with scepticism because of the affiliation to the union and the strong emphasis on job protection. However, in the unions the initiatives have also met with resistance because the strategic nature and contents of the projects were not understood. In a sense, these projects not only required the building of a co-operative culture between firms, they also called for cultural change within the union (iv).
Chapter Six. Regional cluster cases

Having introduced the regions, the various cluster initiatives and strategies will now be further explored. The present chapter will focus on initiatives developed from a spatial-sectoral perspective. For an overview of the various cases to be examined and the contents of the chapter, see the introduction of the previous chapter (Table 13). The fact that the sector, rather than the small firm forms the starting point does not mean that SMEs do not take part in the initiatives. On the contrary, all initiatives take account of SME development, although with strong variation in position, approach and depth. The conclusions in the chapter will pay specific attention to the SME issue.

6.1. The automotive clusters in the North East of England and Germany

The automotive industry presents various interesting contrasting cases. On the one hand, German regions have a long-standing tradition of automotive production, which has recently come under threat. On the other, in the North East of England the automotive industry presents a new emerging sector triggered by the establishment of Nissan and the following influx of foreign investments in component production. A similar observation can be made in the case of Aragon. With exception of the latter, all regions display substantial institutional response to recent industrial developments. These responses all include some kind of location-oriented strategy to attract or secure automotive business. In addition, they reflect, at least partially, new ideas about networking and co-operation along sector/cluster lines. After introducing the specific regional settings, the following initiatives will be discussed:

- ASSA (=Automotive Sector Strategic Alliance): an initiative to promote skill development in the North East of England, developed by the TEC and business representatives.

- MOBIL: an initiative run by the Land-division of the federal organisation RKW to promote co-operation and learning among automotive suppliers SMEs in Hessen.

- VIA-NRW - a Land initiative in NRW to encourage co-operation and joint projects among automotive suppliers in the region.

- Perspektiven der Automobilzulieferindustrie im Bergisches Land, an initiative from the Land-funded Institute Arbeit und Technik, and ISA Consult to promote co-operation between automotive suppliers in Bergisches Land.
6.1.1. Cluster context and models in Germany

The German initiatives are based primarily on the notion that business performance is heavily reliant on the business environment. The latter is conceptualised along various dimensions: the business chain, the sociocultural setting and the regional environment (Doleschal, 1991). Of much interest here is the emphasis on the geographical dimension. The regional environment is seen as important because historically the automotive industry has evolved in various spatial clusters, each with their own specialisation and internal structure (Table 17). This thus justifies a regional clustering approach, although it is regarded essential that the other two dimensions, the business chain and socio-economic environment, are also taken into account.

<table>
<thead>
<tr>
<th>Region</th>
<th>Main OEM</th>
<th>Specialisation (suppliers)</th>
<th>Internal structure</th>
<th>Support policies (mid 1990s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baden-Württemberg</td>
<td>Daimler-Benz</td>
<td>high quality system components; machine tools</td>
<td>integrated production cluster</td>
<td>Verbundprojekte (led by Steinbeis Foundation)</td>
</tr>
<tr>
<td>(Middle Neckar)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frankfurt</td>
<td>Opel</td>
<td>Design, variety of parts</td>
<td>Low level of integration</td>
<td>MOBIL</td>
</tr>
<tr>
<td>Munich</td>
<td>BMW</td>
<td>Design, electronics</td>
<td>Selective integration, mainly along technology lines</td>
<td>No sectoral targeting; various generic supplier programmes</td>
</tr>
<tr>
<td>Regensburg</td>
<td>BMW</td>
<td>Specialised systems suppliers</td>
<td>New emerging cluster</td>
<td>as above</td>
</tr>
<tr>
<td>Südost-niedersachsen</td>
<td>VW</td>
<td>Research in traffic systems</td>
<td>low integration</td>
<td>Various (e.g. Lean Supplier Initiative, Quality Programme)</td>
</tr>
<tr>
<td>Ruhr area</td>
<td>Ford, Opel</td>
<td>Traditional metal production</td>
<td>Weak internal integration</td>
<td>VIA-NRW</td>
</tr>
</tbody>
</table>

Table 17 Spatial concentrations in the German automotive industry

Source: Rehfeld, 1996 and Strutynski, 1995

The support initiatives for the automotive industry have been triggered by the dramatic development in the industry in the late 80s and early 90s. Whereas until the mid-1980s the industry had been thriving on the basis of its internal technological excellence and external reputation, now the industry seemed to be losing its competitive advantage and suffering from market saturation as well as globalisation tendencies in the larger companies. Suppliers suffered, in particular, from various pressures on the supply chain, described by Koch and Strutynski (Koch & Strutynski, 1996, p.111) as the ‘millstone syndrome’. On one side, suppliers were forced by their customers to lower prices while improving quality, delivery, flexibility, communications etc. From the other side, suppliers were confronted with strong price fluctuations, longer delivery times and market concentration in the supply of raw materials (steel as well as synthetic materials). The squeeze on suppliers reached its apex in the early 1990s when the car producers passed on their losses in the market to their
suppliers, and when they started to increase purchases from outside Germany. This process, sometimes referred to as the ‘Lopez-effect’ after the highly exigent (and controversial) VW procurement manager, undermined the position many firms had traditionally had in the supply chain. Perhaps more importantly, it caused a fundamental break in the relationships between suppliers and OEMs in Germany, which had traditionally been stable and co-operative. In particular, the suppliers resented the fact that, while employing a rhetoric of new-style co-operative relationships based on Japanese management approaches, in reality car makers recurrently broke their promises (including legal contracts) and abused their power as large buyers (Lagendijk, 1997b).

The first response of suppliers to the various threats has been one of isolated rationalisation, of ad-hoc measures primarily aimed at survival in the short term. It was soon realised, however, that more comprehensive management approaches were required, which were geared to a strategic re-positioning of firms in the supply chain (Strutynski, 1995). It was neither sufficient to attribute the crisis solely to unfair treatment by the main customers, nor to see the crisis as part of a cyclical phenomenon. Various business surveys indicated that many suppliers, especially the ‘Mittelstand’ (SMEs), traditionally the backbone of German manufacturing, had not kept up with foreign competitors especially in implementing modern management techniques dealing with marketing, quality control, team working, skill development, and customer services (Waas, 1994; Friedrich, 1994). So rather than basic technological and innovative capabilities, the strategic position in the supply chain is regarded as the critical issue for business development. To remain competitive, firms need to link their core competencies to a ‘unique selling

A supplier performs strategically in the right way, when it acquires a Unique Selling Position with its core customers and gains particular market access through its innovative solutions. Focusing on core competencies also calls for a continuous development of superiority in certain fields of competence (product and process-development, tooling, capacity for system production, logistics) and their protection against competitors (Fieten, 1995, p. 51, my translation).

Koch and Strutynski (1996), who also find a weak link between R&D and company strength, mark the change from a technological to a management focus as a ‘paradigm shift’ in thinking on business development. According to the authors, the notion of strategic (re)positioning includes a complex mix of steps and changes. On the one hand, it entails a process of modernisation through adopting various forms of ‘best practice’ in the areas mentioned before, notably quality management and workers’ participation (Waas, 1994). While workers have traditionally been involved through unions at an industrial level, at the business level participation has been lacking or even absent (Doleschal et al., 1993). On the other hand, a careful assessment of the future business direction was required, to underpin the positioning strategy. At this level, no simple answers should be expected: not just ‘focus on core competencies’ and
increased outsourcing. For automotive suppliers, a careful balance between core and peripheral activities, and between automotive and non-automotive activities often sustains the best chances for survival and development. Moreover, (re)positioning should not be equated with a fixation on becoming or remaining a 1st tier supplier, according to Koch and Strutynski (1996, p.134, my translation):

Market power and competitive strength do not depend on the tier of the supply chain an entrepreneur is operating in. More important is the competence and value represented by the supplier’s product.

Similarly, modernisation should not automatically include enhanced technological capabilities. On the contrary, for many German firms the key issue is to simplify and streamline the process of technological developments and investment rather than to seek further advancements. In a survey among 150 suppliers, Doleschal et al. (1993) even found a negative relationship between R&D expenditures and profit rates. While they acknowledged that this could be due to the fact that it takes time before R&D investment pay off, they also pointed at the problem of ‘innovation trap’. The latter occurs when the efforts of the suppliers are not well attuned to the market and demands of their customers:

The global procurement strategies can easily lead to an ‘innovation trap’, when the worldwide tendencies in products, processes and materials are not closely observed or when the communication with customer does not function optimally (Doleschal et al., 1993, p.11, my translation).

In the German context, networking is generally considered as an important approach to support the development of SMEs. Some initiatives have developed along the supply chain, resonating the idea of a regional cluster model supported by flexible inter-firm trade linkages. Doleschal et al. (1993, p.20, my translation) give the following recommendation:

The model for the modern automotive supplier should not be any more the ‘individual fighter in a Schumpeterian sense’: the changing economic conditions demand co-operation driven and led production of automotive systems and parts in an associational context.

The emphasis on linkages is found for instance in the projects developed by IAT in Gelsenkirchen. Other approaches see the role of networking and co-operation primarily in the context of inter-firm learning and business development. Fieten (1995), for instance, stresses three related themes in business modernisation: re-positioning, comprehensive business development (with emphasis on teamwork and continuous improvement), and self-improvement. Co-operation, facilitated by external moderators and complemented by external advice, is advocated as a way to inspire firms and to enable ‘self-help’ at an industrial level. In Fieten’s expression, support initiatives should unleash the ‘virus of self-improvement’ within the industry. Co-operation is also seen as a step to develop joint lobbying power of suppliers, for instance to improve industry-wide training or to strengthen its position vis-à-vis the OEMs (Strutynski, 1995). Concerning the latter, an interesting phenomenon has been the foundation (1993) of
the Arbeitsgemeinschaft Zulieferindustrie (Working Group Supplier Industry), a federal body aimed at re-establishing co-operative relationships between suppliers and their customers.

6.1.2. Cluster context and models in the North East of England

The English case differs from the German one since the growth of the automotive industry is largely based on foreign investments. The main response to the establishment of Nissan (1983) was to attract suppliers to Nissan with the aspiration to build an ‘automotive hub’ in the North East, that is, to build a regional identity around the automotive sector. Over the last 15 years, NDC, but also local authorities such as Sunderland, have pursued a traditional approach to promoting linkages and attracting external investors. This has contributed to the establishment of around 30 companies in the region. Most of these came to supply Nissan, as part of the latter’s ambition to establish JIT supply of more bulkier components; some suppliers located in the North East because of attractive location decisions (especially cheap labour) and the expectation that proximity would make it easier to become Nissan supplier. Nissan’s commitment to supplier development - referred to by all suppliers consulted as exceeding that of all other car producers - has been important for the industry’s development. Supplier development has also helped firms to diversify their customer basis, something supported by Nissan itself. Local managers illustrated the role of Nissan as follows:

“Nissan is very supportive but very hard” (....) “Nissan has a reputation for screwing suppliers but they have supplier development activities” (....) “If you supply Nissan, you can supply to everyone and for all demands.” (....) “Nissan shows a ‘genuine intent’ to get into partnership, “they mean what they say about partnership”, by disclosing its planning and costing schemes.” (Interviews with suppliers to Nissan in the North East of England, 1997)

For advocates of the ‘automotive hub’ idea, however, Nissan’s impact on the region might have been less significant than expected. In addition to limited local procurement, Nissan established a sophisticated ‘milk-round’ logistical chain from the Midlands to acquire the more advanced metal components (Charles & Feng, 1994). Over the last six years, Nissan has worked towards a more integrated production and supply chain at a European level. Regarding its suppliers, Nissan has moved its focus from quality management to cost reduction, which will be the central goal with the launching of the new model after the Primera. Suppliers, in turn, have become more global in orientation, responding to the ongoing trends of concentration and globalisation of production and supply chains in the industry.

As a result of these tendencies, the main local interest of the automotive businesses in the North East seems to have shifted from linkages to the wider business environment. Nissan, in particular, has been very keen on shaping its own labour force through intensive selection and training, and it maintains a variety of relationships with colleges, universities and
support organisations (such as the TECs) to underpin this. Suppliers have followed Nissan in developing stringent recruitment strategies and have even copied some of Nissan’s methods of skill development and training. A tightening of the labour market in recent years, in which especially skilled workers have been in short supply, has caused Nissan as well as suppliers to step up action in the area of training. Business has also been leading in setting up initiatives because core regional institutions remained oriented to the themes of linkages and acquisition. In Nissan’s own view, the shift from supplier to labour market issues should be interpreted as a natural process, even as a shift to more mature phase of embedding in the region. As a result, the agenda has become more institutional.

6.1.3. Cluster initiatives

**ASSA:** In the North East, several institutional linkages have emerged, especially around Nissan. An industrial initiative was the supplier club, which has played an important role in Nissan’s strategy of supplier development. The first regional initiatives were also geared towards improving the technological and organisational capabilities, as part of the improvement of supplier basis and skill development. Nissan has been keen on assisting in raising ‘awareness’ for business and technology at schools, where the firm saw a ‘missionary’ role. Nissan staff also became involved in the University of Sunderland, in courses as well as at Board level. The firm also assisted in development of new institutes such as the Centre of Advanced Manufacturing and Management (CAMM) in Sunderland. The latter presents an attempt to build university-business links through a stand-alone research and education centre. CAMM plays a role in supplier development using Nissan practices; the centre helps with student placements in the automotive sector. However, the centre has not really become the centre of technological expertise some had initially expected. At present, a new research centre is being planned, with help from American car producers that may fulfil this role.

For Nissan, the most significant development appears to be the initiative geared to skill development and training, through the so-called ‘A19 initiative’ and ASSA (Automotive Sector Strategic Alliance). These initiatives have been designed by senior staff from Nissan (partly on secondment) and Sunderland TEC, and are also linked to other automotive projects, such as the national SMMT Forum. ASSA was established to channel ESF money to an apprenticeship scheme and graduate placement in the automotive sector. The objective is to take the responsibility of managing training off the firms. The project has a double structure. On the one hand, there is the ASSA Forum with a board and subscribing members; on the other, ASSA Training and Development Ltd delivering the services. The participation of Sunderland City TEC is crucial for bringing in external funding and the building of partnerships for funding applications and acquiring regional support. The presence of Nissan has been essential for getting industrial acceptance for the scheme, although some would also argue that ASSA is part of a strategy to offload development responsibilities to suppliers and regional institutions. Firms
have been approached through a process of cascading, starting with the first and second tier suppliers down the supply chain, with the aim to reach 3rd and 4th tier supplier. For ASSA staff, the intention is to go beyond training. The ambition is to transform ASSA into a broader ‘self-sustaining’ industry association, which may serve as a ‘marketing tool’ for the region.

**MOBIL:** The Hessen support programme for the automotive industry, MOBIL, was initiated in 1994 by the Land government. The programme is run by the public economic support organisation RKW Hessen. MOBIL started with a phase of analysis carried out by academics in the regions, to reveal details about the significance of the automotive sector for the local economy, and its actual development (Koch & Strutynski, 1996). Based on aggregated figures as well as a business survey, the researchers found that in 1995 many workers in Hessen were employed in automotive suppliers (102,500, 18% of all industrial employment), while a more limited share is taken by car assembly (30,000, 5%). The business survey also showed that the sector was bound to undergo further rationalisation. Between 1995 and 2000, an overall reduction of 15% was expected in employment, led by the larger component producers (-24%), while the local OEMs (VW Kassel, Mercedes-Benz Kassel, Opel Rüsselheim) were expected to shed 7% of their workforce. SMEs (less than 500 employees) were expected to shrink by 16%. However, in the case of the latter little interest was found in shifting production to foreign locations, or even in exporting.

MOBIL was designed to make firms more aware of the importance of new management practices, notably those oriented to quality improvement and workers’ participation. Perhaps not unexpectedly given the severe crisis faced especially by smaller firms, the new ideas were generally well received. Indeed, a substantial share of companies examined had already taken some steps in the areas of teamwork, process-oriented management and continuous improvement, although most were still fixed on traditional methods. Less than half of the firms appeared to have sought co-operation with other companies, most horizontally with other suppliers, some also in a vertical direction (primarily with customers). In sum, the analysis resulted in the following list of priority needs that could be met by external advice:

1. business organisation and strategy development
2. quality management (including certification)
3. marketing (customer and product-oriented)
4. logistical chain (from manufacturing to delivery)
5. workforce (qualification, motivation, teamwork, remuneration systems)
6. Accounting
7. Manufacturing (optimisation, process-orientation)

However, MOBIL was considered as more than just a business support programme, but a step forward in developing regional industrial policy (Koch & Strutynski, 1996).
MOBIL intended to encourage a model of inter-business co-operation between SMEs (<1000 employees), within a strong modernisation and learning perspective. One of the core components of MOBIL is the ‘Verbundsprojekt’ in which firms jointly work on the themes listed above. The co-operative work (2 months) was followed by a phase in which firms implement new ideas at an individual level (3 months), followed by a phase of joint presentation and discussion of results (1 month). Other MOBIL components were dedicated to worker participation and the provision and exchange of information through publications and conferences. MOBIL was supported by an Advisory Committee, with representatives from the Land government, businesses, business associations, Chambers of Commerce, unions, universities and economic development organisations. Certain MOBIL components were continued in a new programme financed under the ADAPT-CORE project: business strategy, TQM/CIM, teamwork, project management.

**VIA:** VIA-NRW presents a framework for channelling funding from the Land government to business groups. The initiative is part of the *Programm für Industrieregionen im Strukturwandel* (Programme for Industrial Regions in Structural Change), a programme focused on industrial restructuring through business co-operation and technological development. VIA-NRW is run by a consultancy organisation Agiplan based in Mülheim, and is supported, like MOBIL, by an Advisory Committee consisting of representatives from public authorities, business associations, unions, banks, and the scientific community. The aim of this involvement is to embed VIA in a wider co-operation network in NRW. The initiative is project-based; most projects are submitted from outside, by groups of firms, or Chambers of Commerce, while in a later phase a small number of complementary projects has been initiated from within VIA. Between 1993 and 1996 there were 169 applications (representing 630 firms with 135000 employees) of which 42 were approved (317 firms with 77600 employees). The projects can have a horizontal (inter-firm), vertical (along supply chain) or regional (service provision) ambit; they thus vary from specific joint business improvements (quality management, certification, R&D, etc.) to the establishment of service centres (such as the measurement technique centre in Velbert).

Another, small-scale initiative is the ADAPT-funded project launched by IAT to improve supplier-buyer relationships in NRW (*Optimierung der Produktions- und Lieferbeziehungen zwischen Zulieferern und Hersteller*). This initiative is aimed primarily at improving the co-ordination in the areas of innovation, quality improvement and logistics between firms along the supply chain in the region. The project partners are Opel and six suppliers to the Opel-Astra line in Bochum (between 150 and 1500 employees, total 4110 employees). By including a large carmaker, the project also tried to respond to the growing distrust arising between suppliers and car producers. The project has been developing at three levels: individual businesses (direct support), inter-firm (horizontal exchange of experiences) and OEM-suppliers (vertical partnership-based learning).
Perspektiven der Automobilzulieferindustrie im Bergisches Land: VIA covers the whole Land, and primarily provides a framework to reward submitted co-operative project arising out of the industry. In contrast, the IAT-ISA initiative for Bergisches Land specifically targeted one region, and adopted explicitly an approach of spatial clustering. In certain respects, this initiative presents the best case for a study on regional networking and association strategies. Not only is this an ambitious project focusing on both the business and regional level; it also shows what kind of problems can occur when more proactive strategies are followed.

Perspektiven was preceded by a detailed study and dialogue between academics and policy-makers on the automotive industry in Bergisches Land. The results of the study and policy debates were discussed at a special conference held just before the start of the project (Kraus et al., 1993). The research concluded that automotive production covered an important share of industrial production (25% of industrial employment), but faced a difficult future because of the low level of technological sophistication and lack of larger local players. In addition, the sector was fragmented and atomised, displaying poor local integration but also lacking export potential, and was not recognised as a key sector in the area (compared with textiles and metal production, notably Solinger knives). Rather than benefiting from support, local firms appeared to be confused by the manifold support programmes, including those on co-operation. VIA, for instance, had made relatively little impact on regional businesses since VIA primarily rewarded co-operative initiatives, while it did not show the route to co-operation (neither partner search nor initial trust building). A major goal of Perspektiven thus was to create clarity and induce co-operative behaviour (Rotha et al., 1995). Enrolment in the programme was free.

Business development was co-ordinated by ISA, and aimed at elaborating a systematic strategy of supplier development in a supply chain context (embracing teamwork, CIM, certification etc.). The core objective of supplier development reflected the main interest of ISA as union-based consultancy: to secure regional employment. The project acknowledged a difference between business and regional interests, and gave priority to the latter. This difference is most pronounced in choosing a positioning strategy. For individual businesses it may be most appealing to aim for a first tier position as system supplier. A possible route is to become a multi-national company that relocates major segments of production and marketing to other countries. For the region, according to the study, it may be more useful to nurture second and third-tier position when this may prevent relocation, and presents a more realistic strategy to the firm. The idea was to coach firms in finding the right strategy, and in securing their local ties, by improving inter-firm co-operation as well as enhancing workers’ involvement. Both objectives, however, could not be fulfilled. While firms showed interest in co-operation, they were generally not prepared to go as far as the project facilitators were aiming. To increase workers’ involvement, an attempt was made to establish company councils...
with workers’ representation. This was met by stiff resistance from the management side and could not be accomplished during the project.

The regional strategy was based on a cluster assessment, which aimed at developing structural policies at a cluster level to assist firms with strategic reorientation. The regional analysis disclosed that the co-location of automotive businesses and the wider regional environment played a minor role in strategic business development, and that firms were unspecific (although not disinterested) in their articulation of regional needs and orientation. Structural policies should thus support the development of a regional innovation infrastructure, through increased specialisation and alignment of the existing Technology Centres in Bergisches Land. These centres are seen as active, especially in the areas of start-ups, spin-off and collaboration, although the overall system of technology support is fragmented (Fürst & Kilper, 1995). In addition, a proper regional response to increased rationalisation was to be devised through an integrated business support strategy. This involved workshops in which firms and support agencies co-operated to develop certain themes (quality, logistics, export, etc.). Both elements, the regional innovation and business support strategy, were to be based on associative principles, i.e. through a ‘regional dialogue’. The whole strategy was seen as a “counter-strategy against business closures and relocation” (Rotha et al., 1995, p. 133).

The results from the regional project showed no unqualified success. Both regional organisations and businesses displayed reservations about the initiatives. One problem for the Technology Centres was that, because of their dependency on external funding and contributions, they could not risk too high levels of specialisation. Certain public authorities, moreover, were not really prepared to support a broader associative strategy. Among businesses, finally, levels of motivation and participation were often low, so that some workshop plans had to be dropped (e.g. logistics, component standardisation). The project mainly led to the consolidation of existing networking, rather than nurturing new relationships. One reason for this was that business felt that crucial players, such as carmakers in the case of logistics, were missing. A core lesson drawn from the project was that more organisational knowledge was required about how to facilitate a regional dialogue and co-operation, and what flagships should be used - such as major customers - to enthuse participants. This insight was used in a later project targeting the chemical sector, which will be discussed below.

6.1.4. Conclusion

Because of its economic and political significance, the automotive sector has featured prominently among cluster initiatives. This is also due to the specific industrial-organisational nature of the industry at present. To a large extent, the industrial chain is organised at a global level, from design and production to marketing. Yet there are many specific areas, such as in supply links of bulky components, in subassembly and labour market relations, where the industry, particularly small firms, is dependent on
relations of proximity and on regional embedding. The local-global nexus thus permeates many dimensions of cluster development. Much of the regional cluster action can be interpreted as the regional ‘response’ to global threats and opportunities. In the German regions, the perception of threats present the dominant drivers, notably that of relocation and marginalisation of SMEs. On the contrary, on Tyneside, where no automotive industry pre-existed, actions are more geared to grasping opportunities and ‘institution building’.

A general observation is that the articulation of cluster initiatives in both cases shows how regional linkages are mediated by businesses and local institutions. Only through examining the way the social interaction between the actors in the region evolves, can one understand the shaping of the local linkages. In this context, businesses are generally driven by strategic consideration defined by their position in global chains. In addition, they pursue specific regional objectives particularly in the domain of the labour market and infrastructure development.

Regional actors pursue regional interests, and have the difficult job of aligning the interests of what are increasingly ‘global players’. Their strategic power lies in exploiting the business dependencies of the region, and in capitalising on those aspects of the global value chain which allow benefits from local clustering (such as supply chain development). In the case of SMEs, support is devoted to upgrading and modernisation, preferably in such a way that the firms keep their positions in the supply chain but also remain embedded in the regional economy. The case of *Automobilzulieferindustrie im Bergisches Land* showed that this actually led to a kind of trade-off between business-oriented strategies and region-oriented strategies. As businesses, suppliers may benefit most from aiming for strong positions in the value chain through outward-oriented investment strategies. The region may benefit more when firms aim for less ambitious strategies retaining a stronger local orientation.

In the German case, creating a kind of regional orientation appeared to be difficult. For certain regional interests, notably employment related, business commitment was difficult to obtain. On the other hand, the North East case gave a good example of the creation of ‘club goods’ through institution building in the context of foreign investments. To what extent this will become a catalyst for further growth and clustering, as aspired, remains to be seen. What is interesting at this point is to compare the growth and relational development in a sector dominated by foreign investment, with that of the restructuring of a long-established sector in the same region which has gone through a long period of decline: the marine offshore cluster.

6.2. The offshore cluster on Tyneside

The offshore industry on Tyneside provides an interesting case of industrial revival and potential cluster building. The development of this sector can be regarded as a manifestation of industrial restructuring at the regional level, and business revival at the firm level. As indicated in the
regional introductions, the offshore industry presents a core economic activity in the North East, and particularly on Tyneside. The industry features in the various lists of prioritised activities for cluster initiatives. Moreover, unlike the automotive industry this is a sector with a long and deep history. The core issue is thus not the regional embedding of recently developed economic activities, but a process of restructuring and revival. Offshore production, to be more precise, presents an opportunity to counter the decline of manufacturing in the region, notably in the areas of shipbuilding and construction. The case under study here is primarily one of ‘institution building’ around issues of supply chain development and common resources. The section will show how associational strategies geared to the shaping of common institutions and ‘club goods’ represent attempts to improve the competitiveness of a specific regional cluster.

While the regional industrial context is different from the automotive case - actually more akin to the automotive case in the German regions - what the two sectors share is the significance of the local-global nexus. The regional developments in the offshore sector can only be understood by highlighting the position of the industry global networks of production, trade and knowledge flows. The analysis then needs to be confronted with an assessment of regional networks. Taking the cluster aspects identified before, this will start with the business system: How are supply chains organised at a local level, and how does this relate to a perspective of ‘institution building’? What kind of competitiveness-enhancing business capabilities are rooted in the local business system? What kind of identity has the industry acquired in the global economy based on its business performance? Extending this picture, a third theme is the presence of local agglomerative assets and institutions, which may be labelled as ‘club goods’ and help the industry to improve its global position as well as internal coherence. Finally, a last theme is the role of regional local institutions in shaping the support system and modernisation agenda. To what extent are these strategies informed by a clustering perspective? These four themes will be addressed in the next four sections.

The information for the offshore study has been obtained primarily through interviews with representatives from the largest companies in the region, and with all association with major involvement in the industry. Additional information on SMEs was been derived from secondary sources, notably surveys carried out in the mid-1990s, plus a limited number of interviews. More details on sources and methodology can be found in Vollaard, 1997.

**Historical development and positioning of the industry**

The background for the development of offshore production on Tyneside is one of industrial crisis and survival, notably in shipbuilding and structural engineering. Much has been written about the causes of the decline of shipbuilding in Britain. While the fate of the industry was sealed by the rise of Asian producers in the 70s and 80s, the industry had already
faced difficult periods before. The roots of decline are not so much sought in the aggressive entry of producers from the Far East, but the fact that Britain had already missed the transition from craft to mass production (Sabatier & Jenkins-Smith, 1993). In the 1920s and 1930s, continental producers shifted to new management models, to large-scale production based on mechanisation and more standardisation of output, while at national level systemic support for R&D and training were created. In Britain, in contrast, the industry remained committed to a craft model, as can be derived from observations by the Board of Trade in 1932:

[the survival of the industry] “will depend very largely on the extent to which the industry is able to reduce its costs by the closing down of redundant yards, by a greater degree of standardisation or specialisation of output, and by a degree of co-operation between all those engaged in the industry (....) We cannot help but feel that the provision for research in shipbuilding in this country is inadequate to our needs; and that the attitude of the industry towards research is not as favourable as it should be” (quoted in Vollaard, 1997, p. 26).

The discovery of the oil fields from the mid-60s onwards offered new opportunities for industrial growth, which was initially largely taken up by firms with a background in structural engineering. The latter were confronted with a stagnating market, due to the end of the post-war reconstruction and building boom. The marine offshore market, in contrast, presented a related activity with opportunities, and thus became a lifeline for the companies. After conversion, firms became part of the supply base for topside production, and developed their own specialisation in steel fabrication, the development of particular systems and subassemblies primarily for topsides. For shipbuilders, despite the need for new outlets, the transition turned out to be more difficult. This can be partly explained in terms of the lock-in of their assets, partly in terms of technological requirements. Shipbuilders were often reluctant to replace shipbuilding related assets with offshore-specific assets, thus tying the firms in an irreversible way to the offshore market. In addition, technological demands are much higher in offshore production, and many shipbuilders lacked the expertise (and the willingness to acquire this) to meet these needs.

Besides basic competencies, the way the industry positioned itself should be explained primarily in terms of inter-firm relationships. While the offshore industry evolved, a new production hierarchy developed, with lead contractors at the top and several levels of suppliers below that. At a first glance, the offshore production line is often compared with that of automotive production. A key role is played by the large firms that design and assemble the offshore platforms. The main components are bought in from the system suppliers, which contribute between 25 to 60% of the total value. Main categories of supplies are

1. structural metal components, and pipework;
2. specialised equipment, such as pneumatic devices, seals, winches, electrical goods, IT installations and so-called ‘HVACs’ (heating, ventilating and air conditioning systems).

3. specialist services: this involves companies offering on-site metal treatment, electrical wiring and installation of instruments, design services, environmental services, training and various professional business services.

There is a great variation in dependency on the offshore chain. While firms in metal-related production or services, as well as design firms, often derive a large share of their income from the offshore sector (sometimes shared with shipbuilding), the reverse is true for pipework manufacturers and most other service providers. The first-tier suppliers of manufactures, notably in metal, in turn, purchase more standardised parts and components from smaller firms specialised in ‘metal-bashing’.

Compared with automotive production, the production chain appears to have fewer tiers, and differs especially in the downstream section. Where car producers dominated both upstream (towards suppliers) and downstream (towards distributors), offshore lead contractors are dependent on a small number of extremely powerful clients, the oil companies. The tender and purchasing strategies of the oil companies have a great impact on the relational patterns through the entire offshore design and production chain. Industrial development is highly dominated by the tender cycles, which determine the amount of work allocated to lead contractors.

One of the results of the decreasing oil price over the last decade has been the launching of various cost reduction initiatives imposed upon the offshore production chain by the oil companies. In Britain, oil companies together with the DTI launched CRINE (1993), which stands for the eloquent phrase ‘Cost Reduction Initiative for the New Era’. CRINE, aimed at deriving more efficiency by streamlining the contractual process. Through the work of various committees and workgroups (the CRINE Network), the initiative has contributed to the standardisation of the main terms and conditions in major areas of offshore work and to the creation of a suite of contracts, removing the need for parties to carry out a full contractual review on each and every tender. While CRINE was presented as a way to create a greater sense of partnership between oil companies and contractors, the initial response of the latter was far from co-operative. Most contractors saw CRINE as an instrument to squeeze constructors’ profits and increase customer control under the heading of standardisation. This idea was triggered especially by the oil companies’ claim that the project was justified on the grounds that British contractors were a third more expensive than others (iv). The initial resistance to the initiative forced the oil companies to review their approach and launch CRINE II, which was more modest in aims and participation.
6.2.1. Local nexus of related industries: the emergence of a cluster?

So, to what extent have these historical and global factors facilitated the growth of an offshore cluster in the North of England? What is important for the area is the presence of a high number of lead contractors (AMEC, A&P Tyne, Aker McNulty, Tyne-Tees Dockyard). Two kinds of linkages can be distinguished with their own specific impact on cluster development: trade and non-trade linkages.

Trade linkages are characterised by a high level of local purchasing. The lowest figure was quoted by Swan Hunters (40%), while other companies even reached levels of 90% (35). Swan Hunter’s low figure was seen as exceptional moreover, a result from the fact that their actual main job involved the finishing of the pipeline laying ship ‘the Solitaire’ with a high level of input obtained via the customer. What these high levels of local content disguise however is that most high value added activities, notably design and special consultancy, are not included in the contract. These phases have traditionally been arranged by the customer, and are concentrated around the main locations of the oil companies HQs, such as London or Houston. In addition, it should be said that offshore production in the North East is dominated by externally controlled firms, which have most of their core administrative and decision-making power outside the region. Indeed, the main capabilities in the region are found at the operational level: ‘metal-bashing’, and assembly. There are some smaller clusters of technologically advanced companies, such as in marine design and pipeline consultancy (see Chapter 7), but these have only a limited impact on the overall shape and development of the industry. Hence, the regional industry in the industry is shaped largely around the construction of top-side modules, and the notions of clustering converge on the development of supply chains around the lead contractors specialising in construction and reconversion activities.

For non-trade linkages, a significant development is the growth of horizontal exchanges between the lead contractors. The last decade, in particular, has seen a growing trend to co-operation, partly as result of the need to share resources in order to fulfil more complex demands from customers. This varies from using specific facilities such as dry-docks to outsourcing specific tasks of offshore fabrication or ship conversion. However, there are still major obstacles to co-operation, stemming from different bidding strategies and different management styles and competition on the labour market (see below). The largest company on the Tyne (AMEC), for instance, has the tendency to quote low prices and tries to seek extra revenues through later adaptations, while other companies tend to take less risky routes. The strongest difference in management styles can be found between the indigenous companies such as Tyne-Tees Dockyard, and foreign owned companies such as Swan Hunters and Aker McNulty. At a more strategic level, however, exchange remains limited. Given its position as merely a ‘construction platform’, the region remains dependent on more strategic functions and decision-making elsewhere.
Specialisation is not only dependent on the articulation of internal linkages, but also on the local assets and support mechanisms available to the industry. When these assets are rooted in the local economy, generally
available to the industry and partly independent from the performance of individual firms, they are defined as ‘club goods’. In the case of the NE offshore sector, two such goods are important: the labour market and the activities of the regional industry association, the NOF. What stands out less is the role of the technology infrastructure. Besides the general emphasis on production, what seems to support the weak technological basis is the observation by business representatives that the links with universities and research centres are poorly developed. Since this is more an issue of strategy development, it will be further addressed in the next section. The present section will explore the labour market and associational dimensions.

The labour market is a sensitive issue in the offshore sector. As a result of the strong variation in production volume, most employment contracts are short-term. Workmen are taken on when a job is secured, and they leave when work is running out. While this has the short-term benefit of maximum flexibility, it has also a number of disadvantages. The hire-and-fire context induces workers to behave in the interest of their own income security only. Especially over recent years, when contract lengths were reduced (down to only one month!), companies in the North East have been confronted with an opportunistic workforce which showed decreasing levels of loyalty to their employer. This became especially acute when order books were full, and workers switched to better paying companies, sometimes even outside the region. Workerve has developed strong associational networks with rapid exchange of information on future employment contracts. Such networking is much better amongst craft workers than among management staff.

The companies have tried to counter what they see as opportunistic behaviour by improving their human resource management, notably through personal databases. However, they can continue to expect such behaviour as long as contracts remain short term:

“Loyalty can only flourish where workers are convinced they have a long-term future. They have to make as much money as they can, because it might be the last contract” (Tom Brennan, chairman of the Tyne and Blyth Confederation of Shipbuilding and Engineering Unions, quoted in the Financial Times, 25 Nov 1996)

Some local observers see the high level of flexibility in the labour market as damaging for the industry in the long run (iv). One key problem is the lack of collective co-ordination in the way workers are employed and trained. In time of labour shortages, for instance, lead contractors tend to poach people from the first-tier suppliers, sometimes leading to supply shortages or quality problems. With high labour mobility, there are few incentives for firms to invest in training. Moreover, industrial relations are highly traditional, based on hierarchical and authoritarian management styles. The lead contractors regularly suffer from spontaneous ‘walk-outs’ caused by collective dissatisfaction among the workforce, often related to issues of safety or working conditions.
Tensions in the labour market are also caused by different pay rates. Traditionally, workers in the offshore sector have received substantially higher wages than workers in shipbuilding. With the growth of ship conversion towards offshore platforms, however, the division between the two sectors has become blurred. While some companies with a specialisation in conversion, such as Swan Hunters and A&P Tyne, pay shipbuilding rates, companies with a background in offshore fabrication, pay higher rates.

While the contractual side of the labour market is one factor with a negative impact on skill development, a more structural factor is the insufficient inflow of young workers. Partly due to a negative image of the industry caused by years of decline and closures, partly resulting from cuts in formal training (notably the abandonment of apprenticeships in the 1980s), the workforce is ageing rapidly. This is seen as a major problem by the industry. There is an acute lack of good technicians and operators, even more than of academically trained engineers. A recent response to this lack has been the gradual re-introduction of apprenticeships, partly by private initiative (Swan Hunters and A&P Tyne), partly through established training organisations. The role of the latter has been streamlined, moreover. From a fragmented and uncoordinated situation in which training was provided by 13 organisations, there are only a few left. The major winner of this concentration process is South Tyneside College, which, from a long-standing tradition in merchant officer training, has expanded its curriculum with more technical subjects.

Another important ‘club good’ is the Northern Offshore Federation (NOF), a regional membership-based industrial association established in 1988. The launching of the NOF was motivated by a study commissioned by the DTI Regional Office (Department of Trade and Industry) which revealed the poor communicative linkages within the industry and the potential for collaboration. The study recommended, in particular, the founding of an organisation representing the interests of smaller firms in the North of England. The NOF started as a spin-off from NDC, and was backed by the Tyne and Wear Development Corporation. It evolved as a membership based organisation. Since its launch, the NOF has been essential in bringing local firms together and providing a range of support services for its members (with a peak around 280 in the mid-1990s, now around 240, including research and education institutions). Through its international presentation, the organisation has contributed substantially to the identity of the North East as an offshore production area.

The NOF gives small firms the opportunity to meet customers in ‘Meet the Buyer’ sessions and customer-specific workshops. Recently new initiatives have been developed to promote IT developments among SMEs, nurturing the development of local business networks, which are able to bid for larger projects. The NOF has played an important facilitative and co-ordinating role in the rationalisation and strengthening of training. The organisation has also forged new links between the sector and universities,
for instance in the context of the national Technology Foresight Programme (1994-1996). The NOF is also active in export promotion and marketing through the organisation of trade missions and exhibitions. The organisation also carries out regular audits. An in-depth analysis of the local offshore supply chain has been carried out in 1998. Part of the NOF work is paid out of ERDF funding.

The NOF is considered as a model organisation for private membership-based business support, especially in Britain as this type of organisation is not widespread. The organisation receives numerous requests for visits, interviews and lectures to explain its development and success. However, as a ‘club good’ the organisation seems to be primarily important for the larger firms in the region, despite its initial emphasis on smaller firms. For the latter, the NOF still seems distant, although improvements have been made. A study on small suppliers on Walker Riverside, North of the Tyne, included the following summary about the firms’ experience with the NOF:

“Their experience seemed to be mixed, but as much as anything this appeared to reflect their level of involvement in NOF activities and their awareness of NOF services. The NOF has come a long way since it was established (…) some of its members, particularly longer-standing members, seem to be unaware of the full range of services it now offers” (Economic Research Services, 1997, p.27)

The strong position of large firms should not be read as purely a matter of political and economic dominance. Since small firms largely depend on large firms for their business, they are primarily interested in opportunities to contact and learn from their main customers. Nevertheless, there is some resentment among SMEs about the dominant role of large companies. In particular, it is felt that the NOF does not make sufficient efforts to gear its services to SMEs, for instance by organising events close to the sites where SMEs supplying to the offshore sector are clustered (such as Walker Riverside). Also on the side of the lead contractors some doubts about the effectiveness of the NOF can be heard, although they are more of a pragmatic nature. Some firms have developed their own initiatives bypassing the NOF framework. As a result, the NOF lacks the power and mandate to play a more strategic role in the region, which could for instance include an ability to launch its own initiatives to set industry standards and co-ordinate R&D. In its present form, the NOF is representative body which is confined in its action to the shared interests of its members. Despite these limitations, it is an organisation unique in its kind in this part of the industrial world, providing an invaluable link between different actors in the regional economy.

6.2.3. Embedding: The role of regional local institutions in shaping the support system and modernisation agenda.

Although things may change in the future, at present there is no concerted strategic action to drive industrial development on Tyneside or the North
East. There are many organisations, each with their own agendas and interests, although ad-hoc alignments take place when organisations develop joint project applications (for more details on the regional governance structure, see previous chapter). Since the early 1990s, regional initiatives have been framed in one setting as part of the application for European structural funds, and this has incited some more fundamental debates about the economic future of the region.

Despite its historical roots in the region, offshore production does not feature prominently in the agenda of core organisations such as NDC, the TECs, the Development Corporations and the local authorities. The main reason for this is continued association with an industry in decline, rather than a sector with renewed growth potential. The poor faith in harbour-related activities has been demonstrated, in particular, by the conversion of many sites for other functions. This even included the decision by the Tyne and Wear Development Corporation to dismantle the only deep-water berth with 24 hours access in the region. It is only recently, with the success of the offshore activities, that the sector receives more attention and interest, notably from technical colleges and training organisations (e.g. TECs). Marine related activities have thus regained their position in the cluster specialisation map of the region and in the reshaping of its regional economic identity.

As a result of renewed interests in the sector, the first turn-around in attitudes has taken place in training. In the 1980s and early 1990s, the decline in shipbuilding as well as the central government’s general policy to abandon apprenticeship schemes, had led to a massive trimming down of educational and training capacity for marine industrial activities. Confronted with an increasing skills gap, the regional institutions are focused on restoring and improving training capacity. The consolidation of the training infrastructure by the NOF, as discussed in the last section, has provided an important step in this direction. Together with the firms, TECs and technical colleges, opportunities are sought to develop new proposals which may draw upon European funding.

Another area of strategic interest is improving the quality and use of the technological infrastructure. A major initiative has been the Three Rivers Project, which consists of three academic-industry collaborative ventures located along the three rivers. Two of these ventures, a process industry centre based in Teesside University (EPICC), and a high volume engineering oriented centre on the Wear in Sunderland (CAMM) bear little relevance to the offshore sector. The third venture, however, the European Centre for Advanced Industries (ECAI) on the Tyne is geared towards marine industries, offshore and energy sectors. ECAI was meant to be related to the department of Marine Engineering at Newcastle University, and its research centre EDC (Engineering Design Centre). It should be noted however that, while the EDC has been very successful in acquiring a wide range of research-related activities, ECAI, as the business oriented venture, acquired a different mission. One problem has been that while
ECAI was in development, and a special building was erected for its location on the Northern Tyne bank (Royal Quays), a part of its activities as well as dedicated space was reallocated to micro-electronics activities triggered by the Siemens investment. One of the complaints from the side of offshore companies is that, overall, university departments have shown little interest in the development of the local marine industries, with the exception of the most advanced activities such as marine design and consultancy.

Within the overall framing of regional development initiatives, ECAI is part of the ‘low volume’ sectoral strand as perceived by NDC, distinguished from three other strands: ‘high volume’, ‘process’ and ‘services’. As explained before, this is a conception grafted onto a pyramidal supply chain model, which stresses the role of large businesses as core buyers. The strands are to be developed through the creation of ‘clusters of common interest’ and regional partnerships. Most of NDC’s strategic action as well as practical work are focused on the ‘high volume sector’, where more opportunities are found for investment acquisition and linkage brokering.

A different form of support comes from a local business support agency that is geared towards promoting networking among SMEs. While this organisation, the North Tyneside Real Service Centre, now covers a wide range of activities, it initially started with two offshore-related groups of firms. The first group, Argonautics, specialises in design and consultancy in marine engineering; the second group, Pegasus, provides services in the area of pipeline construction and testing. The facilitation of and support to ‘business clusters’ was triggered by a crisis situation in which the North Tyneside Council was confronted with an acute closure and threat of further loss of innovative expertise. Argonautics emerged after the collapse of the last shipyard (Swan Hunters) in 1994 (Swan Hunters was later reopened under the same name as a foreign owned ship conversion and offshore fabrication yard. Pegasus was developed after the closure of the British Gas Engineering Research Station at Killingworth which employed around 500 people, some of whom set up their own business. The Pegasus cluster has been particularly successful in supporting new business by preserving some regional expertise in the area of pipeline design and maintenance. Over the last two years, its six member firms have been able to develop new expertise (notably in pipeline rehabilitation) and to access new markets abroad through an aggressive cluster marketing strategy (for more on the role of the North Tyneside Real Service Centre, see below). It should be added, however, that these business clusters are not firmly integrated in the local offshore industry, but are more geared towards the national and international markets.

6.2.4. Conclusion

Since the offshore industry shares some characteristics with automotive production, there are some similarities with the previous cases. Most significantly, the offshore case endorses the notion of the co-articulation of
global production chains and local networks of production. Again, ‘local’ and ‘global’ should not be seen as primarily contrasting spatial outcomes, but as part of a process of mutual influence. Many forms of interaction are shaped and put into context by global factors. Local supply chain initiatives reflect the way companies draft contracts and interact at a global level. Likewise, through observing global developments, local actors obtain ideas about which core factors underpin ‘regional competitiveness’. This informs regional associational strategies targeted on collaboration, institutionalisation (e.g., the NOF) and the shaping of a regional identity and ‘club goods’ (e.g., training programmes). Evidently, all these processes are mediated by local factors, such as the collective view on modernisation and factors of competitiveness (e.g., supply chain focus), and the cultural obstacles to collaboration. ‘Global’ conditions and impulses are thus translated into local action and agendas.

Obviously, there are areas where ‘local’ and ‘global’ present opposite spatial outcomes, for instance in business procurement decisions. If a firm decides to seek supplies from outside a region, this will reduce the sales opportunities for local suppliers, at least in the short term. However, for other dimensions, notably the development of institutional linkages, and various forms of business interaction, a picture of co-articulations appears to be more appropriate. Clustering, in this view, is not so much an issue of geographical concentration of production that stands in marked contrast with tendencies to globalisation and ‘footlessness’. Rather, it reflects a process of creating an active regional response, based on relational principles, to global developments, which includes certain forms of regional networking and embedding.

In the latter processes, SMEs play a specific role. In the offshore case, the role of SMEs in the regional clusters could be addressed primarily through the supply chain perspective. The findings reveal that the position of SMEs is relatively weak both economically and institutionally. This is also due to the specific nature of the offshore industry and the business environment. SMEs appear to be hit, for instance, by the increased poaching in the labour market due to a growing skills shortage. It will be difficult, however, to check such tendencies as long as the skills problem remains, since large firms will generally be the stronger and more preferred party in the labour market. The main opportunities thus lie in improving the training and technology infrastructure and gearing this specifically to the needs of SMEs.

The next case will show a very different economic activity, to see to what extent these conclusions hold when sectors with very different characteristics are examined.

6.3. The wine cluster in Aragón

Only three decades ago, the grapes from Cariñena, used for producing strong, dark wine, were more expensive than those in La Rioja. Since then, La Rioja has become a symbol of a wine region that has gained international reputation and become highly competitive in the international
market. At present, Aragonese wines are marketed internationally as originating from just ‘east from La Rioja’. Like many other wine-producing regions, Aragón appears to suffer from the fact that, to use the words of a famous wine expert:

“If anything, Rioja was too successful and the Spanish are now desperately trying to convince consumers that the country has other wine regions” (Stevenson, 1991, p. 269).

Despite this obstacle, Aragón can now be included in a group of regions that, through a combination of business and institutional factors, has achieved an impressive growth in wine quality as well as sales, notably in foreign markets. Other regions are Navarra, Catalonia, Valencia, and La Mancha. Compared with these regions, Aragón is still lagging behind in its institutional developments as well as in the acquiring of international reputation. Yet, as an influential Spanish newspaper concluded, Aragón may still be neglected wine region but it should be praised for its recent innovation (cf. El Mundo, Suplemento, 28 Sept. 1997).

Aragón has four wine regions, all of which have experienced growth and increased competitiveness. In addition to Cariñena, a major winemaking area is Campo de Borja, West of Zaragoza, which is traditionally known for its quality wine (Borsau). Two smaller areas are Somontano in Huesca towards the French border, which was in decline until its re-emergence as a high quality wine area in the 90s, and Calatayud (towards Madrid). The recent successes of the Aragonese wine can be attributed to the specific initiatives developed in these four regions, as well as the interactions between them. Moreover, economic improvements have not only strengthened the Aragonese economy as a whole, but also provided some grains of hope for areas that for decades have suffered from economic and demographic decline. The regional public sector has played a major, although also contested, role in the various local initiatives. More than in previous cases, the emphasis is on ‘institution building’, which now also includes institutional change at the business level itself.

The findings are presented here following closely the pro-forma introduced earlier (See Table 12). Besides documentation, the results are based on a series of interviews with local experts from the University (2), Regional Department of Agriculture (1), Regional Development Agency (2), representatives of the wine producers (four larger companies), representatives of the business association (3), and representative from the local wine retail sector (2). Interviews were held in October 1997 and May 1998.

6.3.1. The policy cycle

In the Aragonese case, the concept of clusters has not featured explicitly in the initiative except for the most recent period. Nevertheless, especially recent policy developments in the Basque Country and Catalonia have inspired Aragonese policy-makers to explore the possibilities of a local cluster initiative. In the Basque Country, in particular, the cluster approach has been fundamental in the development of industrial policy since 1991.
In the first cluster analysis, Rioja wine (which partly stems from the South of the Basque Country) was even included as one of the potential targets (Monitor Company, 1991). The key elements Aragón absorbed from the neighbouring regions were the relational and associative approach to sector targeting, and the emphasis on the role of ‘leading’ firms to spark off new forms of co-operative behaviour and business change. For this reason, the initiative has been included as a case, with as interesting dimensions the emphasis on a traditional endogenous sector. Recently, the label of clusters has been linked to sectoral initiatives in Aragón, and at present the IAF is exploring further applications of the cluster approach.

Initiation

It is common knowledge that Aragón’s endogenous economic sectors, notably agriculture, show poor performance. Using a production function model, Feijoo Bello and Pérez y Pérez estimated that in most agricultural sectors productivity only reaches 40% to 60% of the optimal technical efficiency rate (based on optimal use of available production factors) (Table 18). Research by the regional employers’ federation revealed that, on average, co-operatives showed low profits, poor use of capital and labour (also finding overcapacity rates of over 100%, although the equipment on which this was based was also typified as largely obsolete), and lacked proper marketing policies (similar conclusions have also been drawn for co-operatives in other Spanish regions).

Table 18 Estimation of technical efficiency in Aragonese food sectors, 1992 (1 = optimal)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Average business efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals</td>
<td>0.62</td>
</tr>
<tr>
<td>Wine</td>
<td>0.44</td>
</tr>
<tr>
<td>Fodder</td>
<td>0.41</td>
</tr>
<tr>
<td>Meat</td>
<td>0.39</td>
</tr>
<tr>
<td>Fruit and vegetables</td>
<td>0.33</td>
</tr>
<tr>
<td>Total</td>
<td>0.39</td>
</tr>
</tbody>
</table>

Source: Feijoo Bello & Pérez y Pérez, 1994

On the market side, a double problem is observed. Not only have export figures been generally low, agricultural products also suffered from a low esteem in the local market. This is considered a major obstacle to further product development and market expansion. Public support to the wine sector in Aragón is thus part of a wider ambition to improve both the supply and demand side of the Aragonese agricultural sector. Wine is not the only product that has been targeted, but so far has been the most important one. Other products are cereals, ham, fruit and vegetables, and olive oil (supported by ADABA Asociación para la Defensa y Promoción del Aceite de Oliva del Bajo Aragón, see www.iaf.es/adaba/index.htm).
Role of support agencies and funding regimes

The initiatives have been developed through the Regional Government, notably the Department of Agriculture and the Regional Development Agency (IAF). While the Department focused on technological assistance and attendance at specialised fairs, IAF directly intervened in business development and assisted in export promotion. In general, the Department’s role is more supportive, and that of IAF is more strategic. The initiative discussed here has been largely facilitated by IAF, and took shape in the early 1990s. There are also other organisations that actively promote agricultural development, such as the business federation CREA. As indicated before, CREA acts largely independently from the local authorities.

IAF is the semi-private arm of the regional government in charge of more strategic forms of intervention. In supporting the wine sector, IAF has been the leading organisation. It has used its own resources plus European Structural Funds to finance the intervention. Since a part of the finance was spent on direct participation in capital shares, it is expected that this will be regained once IAF pulls out. Other public organisations have also been involved, particularly for technology transfer. This includes a general supportive role by the Department of Agriculture and an operational role by the Station for Viticulture, which has a special role in sustaining and improving local vine varieties. Also banks have collaborated in the sectoral initiative alongside the public sector, which at least for this sector is quite a unique phenomenon. They have made a substantial financial contribution, especially through shareholding (see below).

Cluster mapping and audits

Two kinds of local information have informed the public interventions. First, more general knowledge about the state of the agricultural and wine sector; second, a specific audit of the sector issued by the regional development agency.

General sectoral knowledge is widely available. Much more than the industrial and service sector, the agricultural sector is subject of a constant research effort. This is due, to a large extent, to the fact that agriculture has traditionally been the only significant indigenous sector in the region, and that much of the applied research in the university and research centres has been geared towards the agricultural sector. Most of the research is technological, but some research is devoted to the organisational structure of the sector, notably the role of the co-operatives. As in most areas of Spain, co-operatives have dominated agricultural production in Aragón since the 1960s. One of the key questions that has occupied researchers is to what extent have co-operatives a suitable organisation to meet today’s competitive challenges, in terms of both productivity and marketing. While it is generally acknowledged that co-operatives have played an indispensable role in the modernisation of agricultural production in the past decades, they are now increasingly perceived as inflexible and rigid. A major problem is that the
farmers, as vine cultivators, tend to resist tighter quality conditions and vine selection. Because they own the winemaking co-operatives, they can thus frustrate any attempt to upgrade product quality through demanding improvement of the raw material.

More specific knowledge was obtained through commissioned research. The main conclusion drawn from general observations was that the indigenous wine sector faced the challenge of transforming a low-quality, production-based system into a high-quality, marketing oriented sector. Within this context, IAF asked a consultancy firm to examine the business side of the sector (1991). Finding especially the quality and marketing sides wanting, the report produced the following recommendations:

1. to draft a strict quality plan covering the whole chain from field to marketing, which would improve competitiveness against other Spanish quality wines
2. to develop homogeneous product characteristic for each of the Aragonese wine regions, facilitating differentiation and hence the creation of ‘exclusive’ identities for each region.
3. designing and implementing plans for marketing, and promoting ‘wines from Aragón’ as quality products closely associated with the process of wine certification.
4. development of commercial structures to acquire and consolidate substantial local market shares, also exploring the (inter)national market perspective.

The support model that was advocated was one in which ‘leader firms’ were created in each of the four wine areas in Aragón. These leader firms should then acts as local disseminators of new business cultures, new working practices, new technologies, and, most significantly, organisational change. The latter was achieved by the fact that the ‘leader firms’ were supposed to be private companies, substituting for co-operative forms of marketing and preferably also of production. Leader firms were thus seen as vehicles to move wine production from the era of co-operativism to the era of capitalism. However, transformation towards increased commercialisation and professionalisation was combined with a notion of local associationalism (‘gluing’ is the term used by the government agency and local wine experts). Such associationalism was supposed to include a trend towards collaboration as well as of concentration: “The realisation of these points requires a close collaboration between the Bodegas, based on the assumption that the strengthening of the DO demands a leader Bodega and a brand name acting as growth engines, pulling the other firms” (comment from IAF, 1998)

It was through demonstration and collaboration that good practices were expected to spill over from ‘leader firms’ to followers in the area. This also demanded a change in basic attitudes and behaviour. Despite the dominance of co-operative organisational forms, co-operation between organisations was largely lacking. Competition within the wine areas, particularly between villages, was rife, and seen as impeding wider
modernisation. ‘Leader firms’ were thus expected to give an example at a subregional and regional level. The strategy was also supposed to contribute to concentration by merger of local companies.

Subsequent follow-op research was commissioned from another consultancy to look in more detail at one area, that of Somontano, and to develop a strategy to revive the wine sector there. Wine production in Somontano had reached crisis point. In the case of two large co-operatives, farmers had not been paid for their crop for a year or more. Somontano, accordingly, became the initial focal point of support.

Setting objectives and methods

The main goal of public interventions was to facilitate the transformation of the wine sector from a backward, fragmented industry to a modern, quality oriented sector with increased local and external market share. Especially in the wine sector, quality improvement is seen as the only way to survive in a market in which customers are increasingly demanding and which, despite existing overcapacity, is constantly challenged by new entrants, notably from the New World but also from new Old World areas (e.g. East Europe). In effect, from an international perspective, Aragón can be considered as a new entrant itself. Public intervention was not only geared to foreign markets, but also to address poor reputation and increase market share at the local and national level.

To translate the general goal into more specific objectives, much was learnt from other successful wine regions in Spain. Success, particularly towards international markets, was attributed to two factors:

1. improving quality on a continual basis (following notably Rioja and Penedés, Catalonia)
2. marketing through accessing the retail chains in the Western markets (supermarkets and wine shop chains).

Two regions which are seen regarded as particularly successful in marketing are Catalonia, which is characterised by its commercial spirit, and Valencia, which was able to benefit from its marketing knowledge and established retail chains for fruit. Much marketing in Valencia is carried out on a collective basis, whereas in Aragón firms have traditionally worked on an individual, hence fragmented basis. Other regions, such as Galicia, and Andalucía have led in public support strategies to improve marketing and promotion, while others have led in technological developments (such as through the viticultural and oenological research station in Navarra, EVENSA).

To this double aim, improving quality and marketing, another dimension should be added, that of institution building. To compete on a quality basis in the wine sector, production areas need to be recognised as controlled quality wine zones, and the need to have the systems in place to meet the European standards for quality wines. These standards, largely grafted onto the French model of origin control (Appelation Controéle), demand exact spatial demarcation, prescribe traditional use of vine varieties and cultivation methods (which means: no or little irrigation), compel local
bottling, set maximum ceilings for grape yields per hectare, and demand the implementation of wine testing systems. In Spain, origin control is regulated through the label of ‘Denominación de Origen’ (DO), the Spanish equivalent of ‘Appellation Controlé’. A key role in arranging the institutional aspects of the DOs and in co-ordinating the original control is played by the local regulators of each DO (Consejadores). Over 60% of the Spanish area under vine enjoys a DO status; ironically, while the EU thus protects most wine names, this excludes the name of Sherry, something which was opposed by Britain and Ireland when Spain entered the Common Market in 1986.

For Aragón, then, this meant that the four wine regions had to comply with the conditions to become an area of Denominación de Origen, and that the amount of wine bottled with under the DO label had to be increased. The Reguladores and ‘leader firms’ were to play a major role to achieve these objectives.

**Implementation**

As followed from the audit process, establishing leader firms was the main method for sectoral development. This process took several shapes. In Somontano, a new firm was mounted (COVISA, selling under the name Viñas del Vero), on the basis of public and commercial bank investments. COVISA controls the full chain of production (cultivation, fermentation, bottling, and marketing). The company even has its own R&D department.

Also in Somontano, another limited company (Bodegas Pirineos) was established with the help of public funding and other investors (banks and wine companies) to revive and modernise two co-operatives by providing a commercial marketing outlet. A third Bodega also emerged, without public support but which has benefited from the rising reputation of the DO (Enate Viñedos y Crianzas del Alto Aragón, regarded by experts as one of the best winemakers of Aragón). Additionally, in two other areas (Campo de Borja and Cariñena), concentration of the wine production and marketing phase was desired. After initial attempts to transform co-operatives into single commercial companies had failed, IAF took a stake in two companies. First, Bodegas Aragonesas in Campo de Borja, which in addition to its traditional link with one co-operative, incorporated a new link with (as well as capital of) the co-operative Santo Cristo de Magallón. Second, Grandes Vinos and Viñedos in Cariñena which, through the agreement, has been linked to three local co-operatives: San José de Aguarrón, San Roque de Alfamén, San Barnabé de Cosuenda). In the latter region, IAF faced strong resistance from the largest Bodega of Aragón, San Valero; an agreement was only reached last year. In Calatayud, finally, IAF has not yet been able to achieve results, despite some initiatives and much pressure.

**Cluster composition**

Given the emphasis on leader firms and concentration of production/marketing functions, the selection of firms was to a certain
extent straightforward. The initiative targeted the largest wine producers in each region, and aimed at concentration of production and sales through a limited company (Bodega). There was a tendency in this strategy, however, towards a more inclusive approach. The initiative to support the creation of Bodegas Pirineos, for instance, was partly triggered by the fact that the first action in Somontano, the creation of COVISA (initial project 1986, established between 1990-92), had bypassed the established growers and producers. “We are the local producers, and we are not receiving any support”, was the comment of a local wine producer at their initial response. Intervention thus shifted from focusing on one ‘leader’ as model firms to a broader intervention to prevent a major economic collapse in the area. Equally, the support to the other regions was in part triggered by the feeling of an unfair favouring of Somontano. Similar feelings of resentment emerged: “We are the established wine regions, so why is Somontano receiving so much public support?”. More specifically, one representative of an established Bodega claimed: “we would be light years from here if we had received the subsidies given to COVISA”. While concentration and creating leader models had been part of the strategy from the outset, these reactions led to direct public interventions in each region (Table 19). At the bottom line, hence, the cluster composition is not confined to firms, but to geographical borders. It is the full four DOs at which the initiative is aiming, and it is only those wine producers that are not located within the DOs that are really excluded.

Table 19 Direct participation of IAF and other regional bodies in the wine sector, 1997

<table>
<thead>
<tr>
<th>Firm</th>
<th>Region</th>
<th>IAF participation (%)</th>
<th>Other investors</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Somontano</td>
<td>28.5</td>
<td>Dept. of Agriculture, 3 banks</td>
</tr>
<tr>
<td>B</td>
<td>Somontano</td>
<td>20.8</td>
<td>Banks, 2 Bodegas, 1 Co-operative</td>
</tr>
<tr>
<td>C</td>
<td>Borja</td>
<td>40.19</td>
<td>2 Co-operatives</td>
</tr>
<tr>
<td>D</td>
<td>Cariñena</td>
<td>26.6</td>
<td>3 Co-operatives, 2 banks, local society for transformation of the wine sector</td>
</tr>
<tr>
<td>E</td>
<td>Calatayud</td>
<td>0 (still under negotiation)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Bodegas (presented anonymously) and IAF

Evaluation and monitoring.

Since this initiative is more a sequence of actions within a larger than the unfolding of one programme one cannot speak of a proper evaluation framework. The interventions are justified largely on the basis of the commercial success the targeted firms have shown in recent years. Obviously, parts of the activities funded under the Structural Funds are subject to evaluation, but this is only confined to the particular investment undertaken (largely in infrastructure).

6.3.2. Business development perspective

Direct benefits: improving business capabilities through clustering

This initiative was directly targeted on business development, against the background of considerable modernisation potential and with substantial
It may come as no surprise, therefore, that business development has been very successful. In practical terms, new state-of-the-art equipment was installed in all Bodegas for pressing, fermenting, blending and bottling. Most machinery was bought in Italy and France, with only simple equipment procured domestically. Additionally, more professional oenologists have been employed, and their task has become more important in the overall production process and marketing strategy. Old practices based on tradition have thus been replaced by technological methods of selecting and blending. All companies have advanced towards a more sophisticated marketing strategy through improving access to, and knowledge of, export channels to other Spanish regions and abroad in conjunction with the development of regional brand names (DOs). Marketing entails an in-depth knowledge of the specific retail inlets in major consumer markets as well as the demonstration that a reliable product can be delivered year after year. In most cases, major customers only offer contracts after Bodegas have given proof of quality and quantity for three years while little or nothing is actually bought; a major problem is thus how to bridge this period without sales contracts. Public assistance has helped to overcome that problem.

An important achievement has been the improvement of the raw input, the grapes. Most striking is the transformation in Somontano. The old cooperatives processed all input regardless of their quality, converting most into cheap table wine, although some high quality wine had been produced since 1988 (Señorio de Lazan Tinto). The co-operatives were led by technical staff, with a strong devotion to the land rather than the commercial side (“le gusta más la tierra”). The new Bodega Pirineos, directed by a high qualified team including an economist and chemist, initially created goodwill by buying (and, most significantly) also paying
for all produce, informing the growers however that it would reduce its number of suppliers and would be increasingly selective with the grapes procured. As a result, what has been improved most significantly, is the management of quality and the capacity to exploit this attribute commercially. Due to quality control and rationalisation, the number of suppliers thus decreased from 280 in 1993 to 210 in 1997, while for 2005 90% of the input is expected to come from not more than 50 firms.

The overall result of business modernisation and the quality strategy can be clearly observed when comparing various indicators of business performance. Figure 5 shows the growth in sales of the largest Bodegas. Three of these have been part of public support to the wine sector, while two others (San Valero and Enate) have not. Figure 6 shows the rising share of quality wines and exports at the DO level. Almost all export consists of quality wine, with the exception of Calatayud, which also exports a substantial, although decreasing share of table wine. It is difficult to assess the employment implications of this development. In 1993, it was estimated that permanent employment in the sector amounted to 475 in the region, with around 10,000 seasonal workers (Albisu et al., 1997).

Business networking: obtaining benefits from collaborating with other firms

Atomisation is regarded is one of the key problems hindering modernisation and market orientation of the agricultural sector, despite the association of growers in co-operatives. To be able to join forces and disseminate good practice, however, it is vital that actors overcome the
many forms of petty rivalry existing between them, notably between villages. Obviously, this is not just an economic issue, but one deeply embedded in rural communities. Moreover, it is not just joining forces that is required, but also the shift from a highly production oriented, technical rationality to a market- and management-oriented rationality. It is fair to say, in this respect, that it is primarily due to the depth of the crisis that has hit the Aragonese rural areas - both economic and demographic - that change of attitudes were possible. Yet, it will be a long way before the local culture will have adopted a new, more managerial style of rural production and marketing.

Business networking is closely linked to institutional embedding in DO areas. While the DO system offers considerable benefits to firms, notably in marketing, it also gives rise to specific regulatory problems. On the one hand, institutionalisation of the DOs provides grounds for collaboration and the setting of common strategies. DOs are governed by a Board with representatives of all the wine producers. The institution thus represents a strong mechanism of self-regulation and control, driven by the incentive to improve the DO image and promote local brand names. On the other hand, the geographical demarcation of the DO membership incites certain types of free-rider behaviour. One aspect of the DO institution, for instance, is that the harvest of each DO receives an annual rating. In principle, this covers all the firms within the area, although the Regulator will decide which parts of the local harvest are good enough to deserve the ‘denomination of origin’ certification. Through this mechanism, ‘follower’ firms thus benefit from the efforts made by ‘leader’ firms in improving quality. The possibility of ‘free-rider’ behaviour was indeed mentioned and resented by representatives of leader firms. Remarkably, one company that had received much public support and benefited strongly from the DO institution in its marketing, regarded the presence of the DO regulatory system as a nuisance. Networking at a regional level can only be sustained if firms remain committed to the DO area of which they are part.

Institutional networking: obtaining benefits from local institutions

Institutional networking generated the largest variation in response. While the attitudes of the local authorities were generally seen as rather effective, strong contrary views were also expressed. The latter applies in particular to those companies that have been successful without public support, and were now confronted with highly subsidised entrants into the market. For some firms, it was not so much the overall strategy that was disapproved of, but the distribution of funding among the firms. For others (particularly in Calatayud), public intervention was seen as unwelcome interference in general. Other regional actors acknowledged the problems arising from the way direct intervention had been used, but praised the way public support had helped to put Aragón on the world wine map. One commentator indicated that the support should also be seen in the context of subregional development. The strong support for Somontano was largely an instrument for assisting Huesca, one of the most affected rural areas in Spain, rather than an instrument of deliberate sectoral support. It was only...
The main asset that a wine region accumulates is its institutionalisation and reputation as a DO, and this can be regarded as the main 'club good'. The DO label gives the region its main identity in the market place. The ‘club’ consists of all quality wine producers in an area. The institutional dimension involves the role of the regulator in controlling the origin and processing of the grapes, in providing the certification, and in facilitating decisions on future plantings, infrastructural changes (such as irrigation etc.). The overall DO system provides annual ratings based on wine testing, which are depicted in Figure 7. This figure compares the Aragonese scores with what are generally seen as the Spanish ‘top regions’ in wine production (Penedès, Ribera del Duero, Rioja, Rueda, Valdepeñas). While in some years Aragón manages to exceed the average performance of the top region, a trend towards stabilisation may be observed. This is partly due to expansion of the total volume and number of DOs, and partly to the use of modern technology. The results of Somontano are shown separately, to highlight its recent success.

A more tangible ‘club good’ is the vine variety traditionally grown in the region. Formally, the DO system is modelled on the French system and prescribes the use of local vine varieties (‘local’ means traditionally used in the region, which does not exclude the possibility that similar varieties are used in other Spanish regions). However, in most Spanish regions a more hybrid system has evolved, in which a combination of local vines and well-
known vines, such as Merlot, Pinot and Cabernet Sauvignon, is planted and used to produce exportable quality wines. In this way, a similar strategy is followed as in Eastern Europe and New World wine areas (although in the case of latter, the regional denomination was dropped all together). In the case of Aragón, some companies largely use local varieties (e.g., Garnacha, Tempranillo, Moristel), while some are only using French varieties. A representative of the latter referred to the state’s emphasis on local varieties as a “romantic” vision of DO promotion, which was not sustainable in an international competitive market and often created an unnecessary regulatory “corset”. To some extent, this tension has weakened the ‘club’ nature of the ‘denomination’ asset. The more ‘global’ companies, that is, firms using international varieties, with capital goods procured from abroad, applying international management practices, and selling substantial shares outside the region, appeared to feel less attached to the DO or even the larger region. Such a ‘global’ orientation also implies a lower inclination to work together with other regional organisations such as the Station for Viticulture.

While this discrepancy was generally recognised, some observers felt that both strategies - local and global orientation in varieties - could, and perhaps even should, co-exist. Much depends on future market development. While the use of global varieties has clearly allowed some firms to grow rapidly, there is a higher risk of losing to other regions than when local varieties are promoted through the DO system. A crucial issue is what consumers worldwide will buy in the future. A feature article on wine in British newspaper The Guardian quoted the following comment from a leading wine expert:

“Some wine writers fear the end result [of similar varieties everywhere] could be product which is increasingly homogenised (...). They fear consumers everywhere soon will have a choice of nothing but Chardonnay and Cabernet Sauvignon. (...) the best of the flying wine-makers should, rather than trying to introduce the same styles wherever they go, take the best local styles and improve them. If it helps avoid the quality pitfalls that were there before, then that’s good”

In the local context, consumer research validates the importance of DOs as marketable ‘club goods’ but also reveals some of the limitations. Even among regional consumers, only a few buyers know more than just the top-three brands from the three largest DO, while many, at least until recently, were not aware of Calatayud as a DO. It is only since the emergence of high quality wines in the late 1980s, that consumers have started to recognise Aragón as a wine producing area to be proud of, which is perceived at DO level. An extensive study on this issue reported that

“The primary factor valued by consumers in wine purchasing are the origin of the wine, the inclusion in a Denomination of Origin, the price and its organoleptic characteristics [i.e., look, smell and taste]”

(Gil Roig & Sanchez García, 1996, p.115).
The study, using an extensive survey among Aragonese consumers, revealed the following ranking of DO reputation: La Rioja - Somontano - Cariñena - Borja - Navarra. For foreign markets, the fact that there are four DOs may be seen as a problem. Rioja clearly benefits from having a single DO. The only justification for this differentiation seems to be the rather different styles of wine produced in each region, at least in a historical perspective.

Effectiveness of regional business support

Given the fact that the wine initiative could be linked to other subsidies for rural areas, partly financed under Structural Funds, and a part of the direct investments in business capital are likely to be redeemed, this may turn out to be a rather effective approach. However, as some observers note, the accumulated investments through subsidies are substantial, particularly in Somontano. The state owned company COVISA, for instance, only became profitable in 1997 after six years of operation. A question is whether the initiative required such a heavy investment in one company, or whether a higher subsidy to established companies would have been better.

A more fundamental question is whether an indirect method of support, through genuine cluster facilitation via the DO Regulator would have been more effective. DO regulators themselves tried to push for such an associational approach under the label of ‘inter-professional’ co-operation - joining production, marketing, management, etc. While in theory such an approach might have been preferred (combined for instance with a credit scheme for capital investments), the lack of collaborative attitudes might have posed a serious obstacle to such an associational approach. Finally, there seems to be some evidence, as indicated before, that relationships between technical support centres and business have improved, in line with the cluster-as-method perspective.

Demonstration effects

Various levels of demonstration effects can be distinguished in this initiative. First, the firm-to-firm level. While learning effects have not been institutionalised, proximity as well as the ties through the DO have facilitated substantial exchange of information and experience. A part of this effect has been enforced upon the growers, moreover, by the quality conditions introduced by the Bodegas. Second, a subregion-to-subregion (DO to DO) effect; this has been triggered partly through contact between firms and support organisations (such as the Station of Viticulture), partly through the pressure on the authorities to extend the intervention to established companies. Third, demonstration to other sectors. After the promotion of local wines in the regional markets, the government has sought to expand the Denomination of Origin to other products, such as Bacon of Teruel, and Lamb of Aragón.

A core issue in the wine sector is the future of co-operatives. An initial ambition of the modernisation project was to bring the entire production chain of quality wine under the control of one company, since the co-
operatives were seen primarily as obstacles to change. Observers from the business association and Bodegas however do not endorse this view. While many co-operatives are indeed opposed to change, there also many cases where co-operatives have led in quality improvement and commercialisation. Already in the early 1980s co-operatives founded commercial Bodegas and committed themselves to a quality enhancement programme controlled by the Bodegas. To secure an independent position of the Bodegas, some co-operatives only took minority share-holding in the Bodegas, thus facilitating the development successful marketing-oriented organisations. The problem for the region was that this capacity remained confined to particular spots. Until the 1990s, it was not translated into a region-wide strategy as in Rioja or Valencia. At present, the government acknowledges the benefits of co-operative forms of production, while it continues to promote upgrading and new management techniques via Bodegas.

Embedding of cluster initiative in regional specialisation policies

The observations so far have already indicated that the wine initiatives, while being targeted as one preferred sector, are intended to have wider implications. Beyond doubt, the initiative has contributed to the role of the sector in strengthening regional economic specialisation and identity, both inside and outside the region. Similar objectives are pursued in other agro-industrial sectors. In this sense, there appears to be a strong drive to assist endogenous sectors in the region.

From a specific spatial policy perspective, a key problems remains the ageing of the population. For instance, in all areas most wines growers are older than 50, and there are only very few below 30. The population at large also suffers from ageing, caused largely by rural-urban migration. It is clear that this type of spatial cluster policies is helping to counter these tendencies. To what extent the vicious circle of exodus can be arrested, however, is still an open question.

The role of learning

The support to the wine sector can be described as a traditional top-down approach with little scope for internal knowledge accumulation. The basic model applied is that of modernisation through imposing a capitalist business structure, technology transfer and a one-way vision of local dissemination of good practice. To some extent, this approach can be defended on the grounds that a substantial overhaul of the system was required, and that a top-down approach would be most appropriate. However, the approach also reflects the culture of the political system and support strategies, which is traditionally dirigiste. The policy cycle shows that the intervention did not contain mechanisms for participation, feedback or adaptation. Learning took place, but through direct confrontation with the private sector. At present, there is no embedding of the initiatives in a wider regional learning culture. However, a further
expansion of cluster-oriented initiatives is foreseen, and this may offer more scope for facilitating learning processes.

6.4. Conclusion

The Aragonese wine sector initiative is based on a philosophy similar to previous cases, that of acquiring ‘global’ competitiveness through nurturing collaborative linkages. The method employed however differs in that it starts from a top-down modernisation perspective. Support is based on intervention rather than facilitation. This choice can be attributed partly to the specific problem faced by the wine sector - that of fragmentation and backwardness in production and marketing - and partly to the dominant political culture. Moreover, there are sector-specific reasons. In particular, the initiative has greatly benefited from the existence of an institutional ‘obligation’, that of the creation and strengthening of ‘origin control’ areas required for the sales of quality wines.

The initiative has been changed during its lifetime to respond more closely to the needs of the targeted companies. This resulted in a broader intervention in more regions, and a more positive stance towards the role of co-operatives. Nevertheless, there still is a certain degree of opposition to public intervention among private companies, as well as feelings of animosity between firms. This will make the move towards a more associational approach (‘inter-professional’ co-operation), as aspired to for instance by regulators, a difficult task. One of the core questions is to what extent the ‘leading’ companies - assumed to be regional model companies - will act as local hubs. This research has indicated that there is a threat that, despite the local support received, firms perceive themselves more as global players. The risk is that the emphasis on ‘global’ managerial practices will lead to a ‘disembedding’ of local companies that were intended to transfer good practice from the international market place to local producers.

Formally, all firms included in the Aragonese case are of a small business nature. Although no specific conclusions can be drawn about the position of SMEs, the case shows the tension between different kinds of business institutions operating in the sector. It so not so much ‘small’ versus ‘large’ that presents an area of possible friction, but that between ‘capitalist’ and ‘co-operative’ business modes. Such possibilities in the differentiation within the small business realm should be taken into account particularly when dealing with cases entirely focused on SMEs, as in the next chapter.
Chapter Seven. Business cluster cases

This chapter will discuss two cases of cluster initiatives specifically geared towards assisting SMEs: the first concerns businesses in the chemical industry in Bergisches Land; the second the achievements of the Real Service Centre on Tyneside (NE of England). Both cases have a strong learning orientation, and both rely strongly on brokering. There are also important differences. In the case of Bergisches Land, the core aim is encouraging the SMEs to join forces and design co-operative solutions on specific themes, largely reflecting the ‘clusters-as-method’ approach. The Tyneside case, on the other hand, follows more the clusters-as-target approach, with more emphasis on facilitating closed networks. The two cases will be presented following the pro-forma. The Tyneside case, since this presents a much more extended initiative, will be presented in more detail.

7.1. The chemical cluster in Bergisches Land (NRW)

Like automotive production, the chemical industry in most areas of Germany has gone through a difficult period. A principal reason for this is that globalisation not only affects the production of mass chemicals but also the production and research related to specialised chemicals. Another reason is environmental pressure, which has inflicted higher costs onto the industry. The latter however does not just present a disadvantage, since it has also forced firms to innovate and be ahead of its competitors. Moreover, unlike the automotive industry in which the trend towards global sourcing has ruptured existing supply chains, the process nature of the chemical industry has generally secured the survival of supply chains (that is, except when a whole process relocates). Chemical SMEs are often highly specialised firms, and they tend to be less dominated by large customers than automotive suppliers.

The main tension in the industry, therefore, is not supplier against customer but the sector against authorities. In particular in NRW, with a red-green government, employers in the industry lament the often erratic proliferation of official regulation and the lack of proper negotiation between the industry and the government. A major problem for the chemical industry is its reputation as a polluting activity, which also seems to reduce the interest among young people for pursuing careers in the industry recently. This aspect provided one of the major incentives to the project in Bergisches Land: establishing a regional link between chemical firms and waste management companies.
Since early this century, the Bergisches Land has had a strong chemical sector, with a large proportion of SMEs. Wuppertal is even the birthplace of Bayer. The area has though traditionally exhibited strong individualistic attitudes, with little inclination towards co-operation. According to one observer, the prevailing attitude in times of crisis has generally been: ‘my competitors will go bankrupt before me’. While this stands in contrast with the more co-operative spirits found in surrounding areas, such as Köln (‘Kölner Klüngel’) and Rheinland, the distinct nature of the Bergisches Land have also nurtured a strong local identity, and even a tendency to ‘protect and cordoning off’ the area against its neighbours. Moreover, the region has a history of co-operation in specific sectors, and this provided an initial source of inspiration. The most telling case is that of co-operation in coatings after the Second World War. In the years after 1945, when British chemical firms were reluctant to resume trade with German firms, local coatings firms were confronted with supply shortages. The latter thus established co-operative clubs, so-called ‘to help each other, and the present project could build on this memory.

7.1.1. The policy cycle

Conception and launching

The project Chemische Industrie im Bergischen Land was induced by the crisis felt among local SMEs, and especially targeted the small-scale coatings and waste management sector. It was initiated by IAT and the Regionalbüro. The cluster philosophy was partly based on the idea of inter-firm linkage-formation and governance, especially around waste flows and with emphasis on the role of producer services (notably research laboratories). Partly it was inspired by ideas of collective learning, focusing around a series of themes. However, in contrast to previous projects, the cluster approach had been less articulated before the project and thus evolved during its course. While this was unintentional result of a lack of detailed knowledge about the sector, this more explorative route turned out to be a major advantage. One of the surprises, for instance, for some initiators was the strong interest in environmental issues and improvements.

Cluster mapping and composition; role of funding

No in-depth analysis was carried about beforehand. This was not a deliberate choice, but caused by a shortage of resources. A lot of time and energy was devoted to promoting the project, through individual interviews, press releases, etc. Often the waste and R&D departments of the firms were interested but management was not. Two rounds of personal visits to potential businesses were organised to attract firms and to identify initial issues as part of the formal ‘package’ offered to firms. The industry association also assisted in the enrolment process (Chemieverband). The participation of some well-known persons from local families worked as a lever to attract others, especially in coatings. Several large firms had also been contacted; only one participated in the
end. Firms had to pay according to their employment level; the remaining costs were covered by the Land government. 19 firms participated.

**Setting objectives and methods; implementation**

After four initial objectives had been articulated following the first round of consultation, further adaptations were made during the initial period of the project. The initial package contained the following general targets:

1. co-operative use of producer services (laboratories);
2. establishing an inter-firm waste flow system;
3. co-operation between businesses, administration and authorities;
4. regular exchange of experiences and information (learning)

The first consultations with participating firm brought some substantial adaptations. While the first two objectives remained, the third objective had to be dropped and the fourth had to be made more prominent. The initiators were amazed by the eagerness with which firms embraced the learning objective.

The project was structured around plenaries and focus groups. The latter consisted of an ongoing process of information exchange and collective action, punctuated by expert visits. Not only managers participated, but also operators and engineers. The latter were invited in consultation with the focus group members. The plenaries and expert contributions brought in new issues and agendas, which the firms had to consider. The project went ahead with five focus groups:

1. Research and material testing (producer service oriented)
2. Work safety
3. Coatings (with increased emphasis on training)
4. establishing an inter-firm waste flow system;
5. information exchange geared to ISO 9000 certification

**Evaluation and monitoring**

The project will be subject of an extensive evaluation based on firm interviews. The two organisations carrying the project, IAT and the Regionalbüro, both have a keen interest in learning from the project. Like this project benefited from the experiences with a previous local cluster project, *Perspektiven der Automobilzulieferindustrie im Bergisches Land*, the coming evaluation results will inform the design of future projects.

**7.1.2. Business development perspective**

**Direct benefits: improving business capabilities through clustering**

The main benefits in this project are related to the networking dimensions. Nevertheless, there are two areas in which the firms have seen direct gains to individual business performance. The first is practical knowledge about the ISO certification process, through a dedicated focus group in which (soon-to-be) certified firms shared their experiences with interested firms, an activity that turned out to be of great practical use. The second is the
development of training capabilities in the coatings focus group. This theme created so much enthusiasm and interest, that a group of participating businesses took the initiative for a follow-up, in the form of an application for a training programme. This was finally organised together with the Wuppertal Development Agency, and involved the development of new customised training courses by the Technical Academy of Wuppertal.

**Business networking: obtaining benefits from collaborating with other firms**

The nurturing of inter-firm linkages depended strongly on the intensity and quality of brokering. A crucial advantage for the project was that main broker in the project, an IAT staff member, had made a career in the chemical sector, which allowed her the same language as business participants. The broker’s role, with her business expertise and enthusiasm, was regarded as more than invaluable by project members. An interesting fact is that, although the broker was invoked because of her specialist knowledge, this background was more important for communicating trust and confidence than for the application of the knowledge itself. Another person who greatly contributed to the project was a chemist who represented the unions, and who promoted a ‘partnership approach’ between businesses and the unions. The regular presence of representatives from the employers’ and industry association was essential for the supply of additional contacts and motivation. One additional issue anticipated by the project organisers was potential antipathy between SMEs and large firms and the need for specific forms of brokering. Indeed, SMEs acknowledged that initially they feared dominating attitudes by the large firms. To the surprise of many, however, the larger firms generally adopted open-minded and co-operative attitudes and there was no need for any action on this front.

Trust was a major problem in the waste management strand, which aimed at forging supply linkages towards chemical recycling firms. To explore potential flows, firms had to disclose part of their internal material flow. However, this would make it relatively easy for competitors to trace vital aspects of their production process. In addition, the interest in forming trade linkages turned out to be lower than in non-trade relationships. A solution was found, though, by an information detour through IAT, in which business names were removed and the data fed back in an anonymous form. An additional problem was that during the project suddenly the waste management sector faced a situation of overcapacity and dramatic price reductions, which further reduced the firms’ motivation for this strand of the project, although attendance stayed at a sufficient level. Yet, this provides one of the reasons why the ‘learning’ objective received most response.
Like the automotive cluster, an associational embedding of the project in the regional political-economic system was established. However, this was done in such a way that representatives from business (such as the chemical industry association and chemical employers’ federation) were more prominent than participating authorities or academics. To ‘hide’ the role of public authorities further from business participants, meetings were for instance held in the building of the employers’ federation. Much was invested to entice the managers of the SMEs, since their individualistic and conservative behaviour was seen as the main hurdle to be overcome. The interests of the labour force and the unions were considered less of an obstacle. Not only has this sector traditionally been characterised by good and co-operative industrial relations, the unions as participants in the project played an effective role in raising workers’ motivation. The project was directed by a Board in which one large chemical firm also participated. It should be added, however, that the regional involvement was unstructured, and primarily depending on the interests and efforts of individuals. The response of some organisations, notably the Chamber of Commerce, was close to hostile.

7.1.3. Regional policy perspective

The learning dimension of clusters

Learning was an important aspect of the project design, and became even more important while the project unfolded. In particular, firms were keen on establishing inter-firm learning. The nature and intensity of inter-firm learning differed between focus groups, but turned out to be generally effective. In the most successful focus groups, businesses were especially interested in sharing information and experiences regarding the implementing of new rules and practices. While the formal knowledge was generally available, it was especially the tacit intelligence required for the application of the formal knowledge that was missing. This applied in particular to environmental legislation, training and ISO certification. In addition, the contribution of invited experts helped to shape the focus group agendas by adapting and bringing in themes for discussion.

Learning also took place along the supply chain. Several firms were ‘educated’ by potential customers, for instance in validation management. In some cases, these contacts resulted in commercial contracts. Moreover, some staff, especially technicians, found a platform in the focus groups where they could exchange ideas and knowledge for which there were no opportunities within their own companies. The focus group thus facilitated the unlocking of unused knowledge already present in the region. What remains to be seen is to what extent the project will help to instil a learning culture in the region. On the institutional side, the participation of various local organisations has helped to demonstrate the value of the approach to the wider (semi)public sector. On the business side, the positive attitudes towards the project and the enthusiasm of business participants will be of
advantage in bringing about more collaborative, learning-oriented attitudes.

Other dimensions

With the learning dimension being so prominent, other aspects of regional benefits only require a short discussion.

Club goods: Apart from the change in business attitudes, the project has not produced significant ‘club goods’. It was hoped that the waste management objective would lead to a kind of regional flow management, but this has not materialised.

Cost-effectiveness: since this is a low-cost project, this hardly presents an issue.

Demonstration effect: see last section on ‘learning’.

Embedding: Although this is a ‘stand-alone’ project, it is part of stream of innovative projects initiated by the Regionalbüro. There is no formal embedding in regional development strategies, but there is a strong intention to learn from the project for future initiatives.

7.1.4. Conclusion

Chemische Industrie im Bergischen Land presents a small-scale innovative project of regional support for SMEs. The project followed a clustering philosophy, with emphasis on collaboration and collective learning in a regional setting. There was also the ambition to forge trade linkages between sectors, between chemical production and waste management and between chemical production and producer services. Interestingly, the interactive learning dimension turned out to be most successful. This learning converged around specific themes, many of which had been ‘discovered’ during the project. A perhaps ironic observation is that the project seems to have benefited from an absence of in-depth ex-ante industrial knowledge, which allowed participating firms to have a strong say in the direction of the focus groups. Balancing the business needs with additional expert knowledge, then, provided the right environment for learning and knowledge transfer. The project also started with the ambition to forge new inter-industry linkages thus shaping an environmental-chemical cluster, but this proved to be less successful. Hence, although not intentionally, the cluster-as-method dimension, i.e. clustering as a way to get firms exchanging their experiences and to act on shared interest, turned out to be most significant.

The project illustrates the complex social and institutional dimensions of initiatives geared to changing business behaviour. It was part of an innovative stream of regional policies in which the public sector played a vital role. Nevertheless, it was presented to the firms largely as an initiative coming out of their own sector, deliberately hiding the involvement of public sectors and research centres. In doing so, the project struck the right chords with the firms, since they felt that they were dealing with people and issues representing their own trade and issues. A question is to
what extent such an arrangement can be generalised. In which cases is this an appropriate solution to create business commitment? For Bergisches Land, representing an institution-rich environment, the joining of industry associations and public actors has arguably been the best solution to try out new concepts. In environments where there are no active industry- or cluster-specific institutions, institution building (the creation of cluster-oriented service centres) with explicit public support may also provide an effective route to facilitating inter-firm interaction. The next case presents an example of such a process.

7.2. Business clusters in the North East of England

The final case to be presented here involves the achievements of an organisation in NE England dedicated to ‘cluster’ facilitation among SMEs. The case presents an innovative support programme in line with the ‘clusters-as-targets’ approach, and covers a wide range of economic sectors. Besides providing interesting details about the role of networking and learning, the evolution of the support programme illustrates the complex interaction between the business and regional development perspectives. The core organisation under study here is the North Tyneside Real Service Centre (RSC), which has been operational since 1995. While at present the RSC is involved in more clusters, the discussion will focus here on the six clusters initiated before 1998.

The six clusters are:
1. Argonautics (in design and consultancy in marine engineering)
2. Pegasus (services to pipeline construction and testing)
3. Affinitas (marketing design services)
4. Sarius (software technology focusing on public sector applications)
5. S & S (management standards and systems for SMEs)
6. Environmental cluster (environmental standards and accreditation for SMEs)

The information for this study is obtained through documentation from the RSC and other regional support organisation. A series of interviews has been held with representatives from the RSC and the cluster firms (two per cluster). The discussion of results will closely follow the pro-forma.

7.2.1. From initiation to evaluation: the unfolding of six clusters

Conception and launching

As in many old industrial areas, many initiatives in the North East are born out of a combination of a continual search for ways to improve the local economy and acute crisis events. For the RSC, the initiative responded to an increased disappointment with the way small firms were assisted by the existing support organisation. The first projects were triggered, however, by two closures, which had a dramatic impact on the economy of North Tyneside: the closure of the Swan Hunters shipyard in 1994, and the
southbound move of the British Gas Engineering Research Station in 1995. Apart from the direct loss of employment and income, the area ran the risk of out-migration of high-level skills and thus a further deterioration of the area’s productive and knowledge base. Such a negative spiral had been triggered off before by the closing of shipyards nearby in Sunderland. When North Tyneside Council tried to formulate a first policy response to these events, the concept of clustering was not known. The Council was eager though to find a concept that would help to retain skills and anchor business development in the local economy.

The concept of clustering was identified by the European Section staff through publications of the Centre for Urban and Regional Development Studies (CURDS) at Newcastle University, and through the contact with cluster initiatives in Leeds. CURDS had published several papers, one of which had special reference to the North Tyneside economy, in which Porter’s notion of clusters was seen as a way to nurture forms of endogenous development. The ideas were worked through by a team within the economic development section of the council. One result of the phase of strategy development was a paper presented by Council staff to the Europe Workshop organised by the Centre for Local Economic Strategies (CLES - a national charitable trust) on 1 November 1995. In a paper titled “Public/private sector partnerships - the local development of clusters of competitive advantages”, it was not Porter who was referred to but authors who had written on networking among SMEs, such as Sengenberger and Pyke. In doing so, clusters were reinterpreted in the context of small business network development, linked to the notion of sectoral specialisation advocated by CURDS documentation. More specifically, the CLES paper included the following cluster dimensions:

- Economies of scale
- Business information
- Innovation; collective development of ideas (complementary technology and skills, joint financing)
- Sharing of facilities
- Single source servicing (offering one contact point and collective identity for customers)
- Increased productive capacity (by taking on board large contracts)
- Interest groups (i.e. lobbying strength in local/regional development policy)
- Specialisation - development of areas of expertise (either individually or collectively)

These dimensions can be found back in various publications, promotions and applications of the RSC. In later publications, the two latter issues were omitted.

Subsequently, further inspiration for this networking approach was found in Emilia-Romagna, where the label of “Real Service Centre” was found. The result was that in 1995 staff from the European Section of the Council’s economic development department formed the ‘North Tyneside
Role of support agencies and funding regimes

Within the overall context of the project, the RSC has an awkward position. It is both cluster facilitator and one of the cluster-based projects. Like the six business clusters already introduced, the RSC works on the basis of ERDF grant applications. Formal funding for the Centre was required from 1 January 1996 onwards, initially just for one year, followed by a first extension until December 1998, and a second extension until July 2000. The RSC was created as a partnership between North Tyneside City Challenge, Tyneside TEC and Business Link Tyneside. A key player in assessing the various applications and monitoring the projects is the Government Office North East (GONE), a local manifestation of various central government departments.

The conditions for funding however are set by the ERDF programme. A demanding condition is the provision of 50% matched funding. Matched funding is obtained from the local council and from the firms (the latter mostly in kind). Moreover, ERDF supported programmes are not allowed to pay for direct marketing in other EU countries, although the controlling government department at the UK level tends to adopt a rather flexible approach in this respect.

To acquire funding, the applications for the cluster applications and RSC running costs are all structured and presented as Business Plans. The cluster plans generally contain detailed workpackages with as main categories:

- cluster facilitation: establishing a formal structure of collaboration and communication routines;
- intelligence: addressing the information needs in the cluster (linking to a variety of information sources);
- marketing: promotion through brochures and WebPages, media advertising, exhibition stands;
- access to risk and venture capital (through a financial consultant);
- Collaborative research and development projects (including product development IT, database development).

The S&S plan is substantially different, since the grant is aimed at directly subsidising business consultancy for local firms.

While the first RSC application was written as a strategy document, the second application was presented as a Business Plan. The following tasks are distinguished as Centre activities:

- cluster facilitation and development
- economic and market intelligence: specific sectoral research (maritime sector, electronics report on Software applications and development, Sept. 1996), business needs (Information Requirements Report, May 1996), and a business database (OSIRIS)
- marketing and publicity: through the newsletter (400 circulation, 1st issue July 1996; 8th issue June 1998), press releases, presentations etc.
- management and co-ordination
• monitoring and evaluation

The RSC team contains one project manager, two local economy strategists, one business researcher and a cluster development officer.

Cluster mapping and audits

As can be understood from the way the project was conceived, the cluster initiative did not emerge out of a top-down targeting of pre-selected clusters. Nevertheless, cluster development was linked to a notion of the strengths and potential of the local economy. This was largely based on the list presented by CURDS in 1992, which included:

• energy engineering
• environmental goods and services
• medical and healthcare services (including pharmaceuticals and related biotechnology)
• marine engineering and services

While this was just a suggestive list, not based on any systematic method of prioritising, it nevertheless provided justification for many sector-oriented initiatives. Later reports, notably those related to ERDF grants, presented additions and modifications to the list, notably in service areas. These were used to underpin cluster developments in non-manufacturing sectors. Apart from referring to these documents on regional development, the RSC itself is rather pragmatic about the issue of targeting. In its own publications, the list of sectors reflects the activities the RSC happens to be involved in

“The RSC targets SMEs in the marine, pipeline technology, environmental, software development, design and marketing and standards and system sectors” (newsletter issue 4-5).

At the level of individual clusters, business audits take the shape of needs analysis. The latter is based on a straightforward questionnaire that addresses the main categories of business development (e.g. cash flow, finance, marketing, R&D, training, market development). These surveys contribute to the development plan for each cluster.

Setting objectives and method

The overall objectives were developed in several stages, and have continued to changes. A distinction should be made between the general objectives pursued by the RSC and the specific objectives per cluster initiative.

For the RSC, a central point is the link between business development and regional development. This can be read from the RSC mission statement:

“To maximise the potential of local SMEs, by seizing the opportunities of the emerging global economy. To develop public and private interaction by facilitating private sector interests to generate wealth for the benefit of the local economy.”
The way thinking about the objectives and form of cluster has evolved over time is illustrated by change in the cluster definitions. The RSC newsletter reveals the following alterations:

“A cluster is an organisation comprising non-competing companies from the same sector who work together using a collective identity” 
(RSC newsletters issues 1-3, July 1996-Oct 1997)

“Developing Clusters of competitive advantages is based on the simple concept that small firms in similar or related industries can collectively achieve much more than would be possible individually”
(newsletter issue 4-5, December 1997)

“Clusters are groups of firms in complementary sectors which have come together formally in order to access larger market opportunities” (newsletter issues 6-9, March-Oct. 1998)

These three definitions show various point of emphasis that are central to the RSC’s approach to clustering: (1) the search for an identity among collaborating non-rival companies, (2) the search for synergy and (3) the search for a formal structure allowing small firms to gain larger market opportunities. What is interesting is how these issues have evolved over time, something that will be addressed in the sections below. In addition, the RSC cluster strategies also contain a spatial dimension. There is a general ambition to aim for spatial concentration, not only for individual clusters but also the overall project, included the RSC itself. The site envisaged for this was the ECAI building at Royal Quays in North Shields, a product from the Regional Challenge programme.

While the broad aims of the projects reflect the categories mentioned above, differences can be observed between the specific objectives for the various clusters. For Argonautics and Pegasus, direct objectives were given at birth: retaining valuable expertise and skills by creating new market outlets and improving other business capabilities (technology, finance). However, also for the other clusters the retention of skills in the region is mentioned as one of the objectives, together with the wish to increase innovative potential. For the service-oriented clusters, moreover, skill retention goes hand-in-hand with the ambition to encourage companies in the region, particularly large manufacturing firms, to procure services locally. The more detailed objectives reflect the particular context in which the clusters emerged, although they share the emphasis on business and regional competitiveness, innovation, and the acquisition of larger contracts. S&S’s and the Environmental cluster’s contribution to regional competitiveness is conceived in an indirect way, that is, through improving the business practices and environmental standards of local firms in other sectors. In both cases, the marketing of these business consultancy activities, as part of awareness creation, is a major aim of the clustering activity. One of the objectives in the Environmental cluster business plan thus reads:

“As a cluster of competitive advantage the environmental cluster will (...) improve the competitiveness of [other] local SMEs by ensuring that local firms are encouraged to adopt accredited standards and
good practice, improving credibility within the business and wider community, to meet supply chain requirements, and thereby safeguard jobs.”

Affinitas has a special position, since its major theme of marketing as part of the cluster project has been the cluster approach itself. The brochures and website of Affinitas thus present a vivid account of a “creative collective with a vision for the future” in which the cluster philosophy is promoted.

An interesting theme is how objectives have changed during the project lifetime. This question can only be answered for the Argonautics and Pegasus. The other clusters are too recent to comment on changing objectives. In the case of Argonautics, the original business plan prioritised the role of marketing through promotion and intelligence gathering. While this remained a vital objective, the review led to a new emphasis on training issues. A point of concern remains the issue whether the cluster should deliver and market joint products. Presently there is a working agreement that, for production and marketing purposes, the cluster will be used primarily to establish subcontracting relationships as part of individual contracts (‘inter-cluster contracts’) rather than joint ‘cluster contracts’. Some cluster members still would like to acquire larger contracts on a cluster basis, however. One obstacle to cluster contracts is that legal issues have not been resolved, one suggestion has been to investigate the development of joint patents. Whatever way it goes, there seems to be general consensus that, in the words of one member:

“clustering is essential for meeting the increasingly rigorous requirements associated with bidding for contracts, such as professional indemnity, quality, certification e.g. ISO 9001 (… ) [where] small firms stand no chance”.

Pegasus shows a very different development. Here the members developed a cluster marketing strategy in which the identity of the member firms has disappeared, a step highly recommended by the RSC. For instance, new products are marketed solely with the Pegasus label, not as outcomes of the combined competencies of constituent businesses. Since the cluster firms have all been relocated to one site, the cluster has become an intrinsic part of individual business development. As one cluster member revealed, it was often not clear to what extent they were doing things for themselves or for the cluster. There was a general expectation in the cluster that the time spent on the cluster, estimated on 20% for the past period, would rise to 80% in the future. Even the prospect of further formal merging of business activities has become a point of discussion.

Regarding the method of clustering, this relies heavily on brokering by the RSC. The next section will present an important aspect of this brokering, that is, creating a formal structure to underpin the working structure of the cluster, to define responsibilities and secure business commitment. A further instrument of the RSC is intelligence provision, which also includes information about other business support opportunities as well as market opportunities emerging through the local public sector and other local...
actors. Indeed, in this respect it should be emphasised that, while the formal objectives are couched in terms of competitive advantage in the ‘global market’, there is also a strong local component to the clustering initiatives. While not stated explicitly in the objectives although recognised as method, a major clustering activity has been the collaboration and trading with other clusters, as well with the public sector, within the region. The hub firm of Affinitas, for instance, has designed the corporate identity of Pegasus and the RSC itself. Affinitas has collaborated with Sarius on an internet-based supplier catalogue for the council, and provides marketing skills to S&S. Various other links have been developed (Pegasus - Environmental Cluster, Pegasus-Sarius, Environmental Cluster - S&S), although they have not always resulted in joint projects or commercial activities.

While one should be aware of the possibly discriminating nature of such links, in general they can be seen as contributing to the forging of inter-sectoral links and improving local economic cohesiveness. This, in an indirect way, is likely to contribute to regional competitiveness. RSC members confirm that they have often moved from an initial ‘global’ perspective to a more local development perspective, but they see this as a step-by-step process that will swing back to issues of ‘global’ development.

Implementation

After the cluster approach was triggered by two closure events, the choice for cluster development has been driven largely by opportunity. The first two clusters were triggered by the departure of two major local economic hubs: Swan Hunters, which contained substantial expertise in maritime engineering, and the British Gas Engineering Research Station, specialised on pipeline servicing. Argonautics grew out of a group of existing firms on Davy Bank in Wallsend (1994), later joint with the design department which had spun off from the closing shipyard (Armstrong Technology Associates). The cluster received an initial financial boost from the Tyne and Wear Development Corporation.

Pegasus, on the other hand, grew out of the ashes of the pipeline research station, as a group of primarily embryonic firms (only one firm existed beforehand). The new entrepreneurs thus had two tasks at hand: setting up their own business and creating the cluster. In the view of the RSC, such a launch path is seen as exceptional. Normally, the RSC would not encourage the inclusion of start-ups in new clusters, since this may add substantially to the complexity and risks of cluster development. The specific circumstances in which Pegasus evolved however made the process work. According to Pegasus members, what contributed to the success was that the clustering strategy was preceded by several encounters between ex-BG staff and local entrepreneurs. These encounters, facilitated by NT council, both helped the start-up and clustering process. In addition, the RSC has stipulated that Pegasus could not bail out members to protect the cluster from start-up failure.
Affinitas, originally called the Design Communications Clusters, emerged around the same time as Argonautics and Pegasus, but took a longer time to materialise. Its conception was different in various respects. The cluster was initiated and composed (November 1995) as result of the enthusiasm of one entrepreneur, who found the clustering philosophy very appealing. This firm had already some experience with regional organisations, notably NDC. Furthermore, the cluster operated in a market with a stronger local dimension, that of marketing design. To some extent, this cluster followed logically from what had happened in the two previous clusters. Both Argonautics and Pegasus had shown a strong demand for marketing expertise. Affinitas partly benefited from this demand, in addition to a long list of customers, including large firms operating in the region, and links were foreseen with the public sector (e.g. a private-public partnership to design a supply catalogue for the local council). Affinitas was formally established early 1997.

While the local service provision is obvious from a clustering perspective, it presented a substantial change for the funding bodies and other authorities. Could services fit in a model of clustering? Here the RSC benefited from the fact that services had been included in the SPD priority on clustering. Nevertheless, to acquire funding for such less appealing clusters, it was necessary to make the applications more detailed and focused on ‘hard’ output targets (in the form of marketing and research output to be achieved, exhibitions to be visited, number of contacts to be made, contracts to be expected, etc.). This trend also reflected an increased demand from the funding bodies (represented by the Government Office North East) for verifiable results.

Where Affinitas can be seen a truly ‘grassroots’ initiative, Sarius (original name Polaris), the software cluster, was established in a more top-down way. Over the years, electronics and IT have emerged as a key sector of interest in the North of England. Before the cluster initiative, a number of studies and pamphlets had already been published on this sector claiming that it was time for the region to grasp the opportunities arising in the electronics sector. An important source of inspiration came from the Scottish experiences with supporting electronics and IT, for instance through the Software Federation. There was also a practical reason for the facilitation of Sarius. The council wanted to support a local firm that has just been ousted from a European 4th Framework RTD programme on public procurement. Building a cluster would contribute to the survival of the firm, notably through the funding of a series of R&D projects linked to public procurement and benchmarking programmes for public services. More than the previous clusters, therefore, Sarius developed within a context of intensive business-local authority interaction. As argued in the Business Plan:

“It was felt that the type of co-operation between Local Authority and [such] companies (…), and the passing on of work between local companies in the interest of mutual support had very clear benefits and was to be encouraged”.

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Again, this point endorses how during implementation and expansion of the cluster programme local orientation became more significant.

The S&S group, focused on management practices in the leisure and tourism sector, emerged in a bottom-up way, although through a close link with an older enterprise agency, ENTRUST. One of the entrepreneurs learnt about clustering through his position in a support organisation, and an initial three-band cluster with two associate members was founded. Through the RSC, the cluster members themselves wrote the application for a small grant from NT Council to organise an exhibition. The exhibition, which focused on business consultancy for the ‘established’ RSC sectors (marine and pipeline), was not very successful. Nevertheless, the cluster members decided to press on with a more extensive bid, now linking with the leisure and tourism sector. The choice for the latter was based on opportunity. The Council had already developed a strategy for this sector, which was seen as neglected despite its potential for indigenous economic growth. In addition, addressing the lack of management support to SMEs was included under the SPD priorities. S&S can be considered the most ‘bottom-up’ of the clusters, with a high level of commitment and momentum from its conception.

The environmental cluster, finally, developed alongside S&S, as another spin-off from ENTRUST. Inspired by the cluster promotion through the RSC, an energy management counsellor of ENTRUST developed the idea to develop an integrated suite of environmental services through clustering, with emphasis on EMAS accreditation. One of the members is also part of S&S. After an initial phase of encounters facilitated by ENTRUST, the RSC assisted in drafting an ERDF application. Like the two previous cases, the environmental sector is considered a potential growth area with a strong local market orientation that tends to be neglected. The environmental sector itself seems to suffer from a poor image and lack of market credibility. This is manifested for instance by the fact that there is a serious underspend in the available subsidies for EMAS accreditation (SCEMAS), despite widespread initial interest in EMAS among SMEs.

Cluster composition

An important aspect of the RSC cluster approach is their emphasis on establishing formal structures as part of cluster development. In their own view, in addition to developing a working structure, drafting a shareholding contract or founding a limited company is essential for creating commitment and distributing responsibilities, thus providing a certain level of security and protection against opportunistic behaviour. There is tendency for more recent clusters to start less formal, in the sense that the contracts become simpler or even remain unwritten. Each cluster nevertheless seems to undergo a process of increased formalisation. The first shareholding agreement, written for Argonautics, was drawn up by a large legal firm in Newcastle, with a high initial price (£6000) as well as high costs in the case of changing the cluster composition. According to
one Argonautics member, the contract suffers from over-engineering and poses a handicap to future development. The closed nature of the clusters is reflected in the fact that the contract distinguishes between three types of members: ‘A’ shareholding for full members, ‘B’ shareholding for firms on the nomination of becoming full members and associate firms. The latter includes firms with a different core activity but which may contribute to the cluster in specific areas (e.g. marketing consultancy); this level has not been formalised yet.

The idea of an ‘associate’ level has been actively exploited by Affinitas. This cluster consists of a core of four firms, embodying the actual cluster, and a supply network comprising about 20 firms. For the latter, the same benchmark methodology was used as NDC had applied to the hub firm (a so-called SCAT test). The benchmark test served a double purpose. It was part of the Affinitas project, as an R&D project; and it contributed to the formation of the Affinitas supply network. Affinitas has been established as a normal limited company rather than with a tailored shareholder agreement. In this way, £9000 less was spent than foreseen in the original application.

Sarius was conceived, as explained above, in a more top-down way. The top-down approach was most manifest in the cluster composition. After having decided for public procurement as the main route of development, the Council chose five firms, out of a pre-selection of 20, that were added to the original hub firm. According to one cluster member, the outcome of the selection was probably not the best one, which was also due to the pressure exerted by particular individuals. Thus far, no formal structure has been established, and the cluster remains a simple marketing front.

S&S emerged out of contacts developed through ENTRUST, established a formal structure after acquiring ERDF funding. Associate firms will be brought into the cluster for dedicate and time-bound activities only. The environmental cluster developed in a similar way, and is waiting for grant approval. A limited company has been established to formalise the cluster.

A key issue concerning cluster composition is change. Reshuffling happens in all clusters, and - when not caused by personal circumstances - is mainly due to different views on the direction and goal of clustering. Argonautics has seen three firms leaving (largely for reasons of individual business development), while an association of independent consultants (itself regarded as a kind of cluster) and another company joined Argonautics in late 1997 as ‘B’ shareholders. Several outside companies have expressed interest in joining. It takes however a long time for the established cluster to accommodate new members. At present, new admissions are linked to the identification of skill gaps in the cluster. Pegasus had originally six core cluster members and six associates on board; two core members have left (one of which became an associate) and one new firm has joined, while the number of associate members is four.

Affinitas also showed substantial change. According to one of the remaining members, this was due to the fact that some of the original members were disappointed to see that they would not directly benefit

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from the funding acquired. Of the five original applicants, three remain (one core firm moved to the supply network), clustered on the same site. One new firm has joined Affinitas specialising in the Telesales area; this firm however will continue to operate from another location, west of Newcastle. Sarius has had one change. One firm, which, according a cluster observer, had ‘screamed itself in’ using its political influence, was considered a ‘real nuisance’. It left the cluster due to business failure. S&S has only undergone one change: the addition of one firm specialising on environmental issues.

There appears to be a downward trend in cluster size, something that may not be regarded as a favourable development. The optimal size for a cluster, according to various respondents, is between seven and ten. More than ten is difficult to handle; less than seven however reduces the possibilities to integrate a wide assortment of skills and the building of a cluster with a strong local/regional identity.

**Evaluation and monitoring**

Evaluation and monitoring is part of the daily activities of the RSC. The centre is engaged in regular reporting to the funding bodies. The monitoring activity is facilitated by the fact that the RSC maintains close relationships with its client firms. Interim reports on cluster progress provide detailed information about cluster development and output figures set against targets. These accompany the final claims for grant reimbursement. In this respect, the RSC appears to display a high level of professionalism. The reports are well documented, detailing achievements as well as disappointing outcomes. They include reflections of more theoretical and methodological nature. Perhaps the only note of criticism could be that, for some of the output figures, one might dispute their relevance as indicators of cluster development. However, given the general lack of more appropriate quantifiable measures, and given the fact that the figures match the categories included in the cluster plans, there seems to be little scope for change. Overall, the RSC undertakes a high-quality and transparent form of reviewing its activities. Output indicators are also set by the Government Office North East (GONE) and relate to SDP targets.

**Knowledge flows and feedback**

Apart from undertaking evaluation as part of external scrutiny and accountability, the RSC has also established its own loops of knowledge gathering and feedback. In part, this is an intrinsic part of the brokering activities, in which RSC staff discuss the progress of cluster development in the Board meetings of the cluster. In addition, several one-day planning workshops have been organised with cluster members, which have been important for reviewing the cluster strategy, reflecting on opportunities taken and missed, setting new directions and regaining momentum.

While feedback thus forms an essential dimension of clustering activities, it should be stressed that the initiatives show quite a sharp organisational
divide between the facilitating organisation and targeted businesses. In practice, the RSC is the knowledge hub that translates data and information into new steps in business cluster development. The ‘intelligence’ acquired through feedback and contacts with external actors is thus accumulated and applied primarily at the level of the support organisation. The knowledge flows within the cluster are geared to the implementation of the business plans, and to the daily activities of the individual businesses. At present, most clusters are not equipped with systems to gather a kind of cluster intelligence themselves, which would enable them to develop self-sustained learning processes at the cluster level. Some of the outcomes of the business survey and the regional development analysis, to be discussed below, can be better understood against this background of feedback and knowledge application.

7.2.2. The business development perspective

The following sections address the link between clustering and business development. Much information for this discussion is derived from the interviews with the firms. However, the sources of information (the support organisation and other regional actors) have also served to obtain a picture of collective business development.

Direct benefits: improving business capabilities through clustering

Improving business capabilities, both at an individual and inter-firm level, is the principal goal of most business support activities. Business capabilities underpin the competitiveness of the firms and the areas in which they are located. The following categories of business capabilities have been examined: marketing, quality improvement, R&D, financial, resource sharing, and access to venture capital.

For all clusters, marketing has been a primary area of business development, although with a large variation in spatial scope. The industrial clusters focused on the international arena, while the service oriented clusters target the local businesses. For the businesses, the marketing strands have not always turned out to be as successful as expected. This was partly due to the fact that most clusters lacked a proper identity when they developed their marketing projects. Poor results were also due to a lack of expertise both on the side of the firms and the RSC. For both Argonautics and Pegasus, for instance, expensive media advertising has created little response. Argonautics, moreover, has failed so far to develop and co-ordinate a more targeted marketing approach, although the individual members have gained sufficient experience in presenting the cluster when bidding for individual contracts. Lack of marketing skills was considered a vital bottleneck in Pegasus, which was attributed to the ‘civil service’ type culture in British gas, a recently privatised utility from which its founders emerged. To improve its presentations at exhibitions, the cluster hired a marketing expert, which turned out to be a very fruitful experience. Pegasus, moreover, has developed a strong cluster identity, which involves a complete suppression
of the names of individual firms. To the outside world, Pegasus presents itself as a suite of activities rather than a suite of companies, in which the word cluster is not used. This shift, as one cluster member commented, was caused by the fact that the initial use of the word cluster in marketing only created distrust among potential clients: “Some though it was a kind of ‘confidence trick’. It had to be a fiddle of some kind (...) [hence] clusters are not of much use as a trading vehicle”. In its promotional material, Pegasus is presented as “an alliance of top class engineering companies who specialise in disciplines relating to pipelines and offshore engineering”.

Also for Affinitas, the emphasis on promoting clustering as part of its own marketing turned out not to be the most appropriate way to attract business clients, despite its attempts to build a close association between ‘clusters’ and ‘creativity’. An additional problem for Affinitas was that, due to the presence of many marketing experts, the marketing strand went extremely slow. Nevertheless, a major advantage for the cluster is that each individual firm now enjoys the benefits from various sales forces, and that firms, by passing on work through the cluster and supply network, can go for larger contracts. In output terms, this is the most productive cluster. In the first year, 40 contracts were attributed to the cluster.

For the other clusters marketing has taken a more specific shape, and may thus turn out to be more effective. For Sarius, the main marketing route is through the council, for the environmental cluster via ENTRUST. The questions remains there to what extent a more open publicity should be aimed for.

Quality improvement and certification is a major issue for firms especially in the manufacturing sector. Within the context of the RSC, this has largely remained an affair of the individual firms, although it has become more of an issue of debate and recording at the clustering level. In the case of Argonautics, some support has been offered to ISO 9001 accreditation. Only one firm has acquired this label so far. Cluster facilitation is geared to exchanging experiences and encourage learning on this front.

Research and Development has not had many commercially viable results either. However, it is important to realise that most of these projects were a way for firms to come together and to learn to undertake joint projects. In the recent strategy review, Argonautics members felt that they still lacked an appropriate system for sharing the results and using R&D for future development. Pegasus had established a shared laboratory for research activities, while one research project on pipeline inspection has led to the establishment of a new firm. For Sarius, the research projects were part of its deal with the council; from the five projects envisaged, three in the end materialised (the public sector tendering system PEARL, the public service performance indicator pilot system PI, and the Internet procurement system Cybercat). The same applied for projects of Affinitas, which on one project collaborated with Sarius, while other projects were directly related to the network building (SCAT test) and cluster promotion (CD-ROM).
Resource sharing is strongest among those clusters that are spatially concentrated, i.e. Pegasus and Affinitas, while it seems to be under-utilised in the case of Argonautics. Pegasus’ integration has evolved from a first compilation of an ‘asset register’ at the time of application for funding, which included both ‘hard’ and ‘soft’ assets. Since then, the main task has been to “graft skills onto each other”, as expressed by a Pegasus member. In Argonautics, the intention exists to provide a common data server at Royal Quays, but some doubt whether this will contain any strategic information. The most important development for Argonautics is the development of training skills, in co-operation with TME. There is a wider ambition to work towards ‘a complete suite of skills’ based on an in-depth inventory of cluster capabilities. This ambition, which can be found in the original business plan, was reiterated in a recent strategy document.

Access to venture capital through the assistance of a financial consultant in some clusters has not had direct results. However, over the last year, after an initial phase of suspicion, banks have become more aware of the clustering approach and seem to be quite positive about its impact on business development. One firm reported that being part of a cluster helped to acquire finance. Apparently, it will take time for this dimension to develop.

Business networking: obtaining benefits from collaborating with other firms

Whereas capabilities refer to the resource base of the clusters, networking trust and power relations refer to the interaction, what especially counts is the ‘chemistry’ of cluster development as a result of networking. For cluster facilitators in general, overcoming scepticism and creating trust between firms is the main task for the initial process of networking. For the RSC this task has not been an easy one, and often involved an uphill struggle. In the view of the RSC staff, only one cluster has passed from this initial phase to the next one, that of collective resource development, and that is Pegasus. In the other clusters there is still considerable tension between individual and collective interests and agendas, although this differs substantially between single firms.

Besides the role of the RSC as moderator, trust building has also been encouraged by the presence of industrial figureheads. This is most manifest in the case of Argonautics, where Marshall Meek, a renowned naval architect, has acted as a ‘neutral’ outsider, affiliated neither to one of the businesses nor the public sector. The other example is Pegasus, where Ernest Shannon, former director Special Projects of British Gas, plays a role as non-executive chairman.

An essential dimension of networking is the mutual exchange of valuable information and practices, the passing on of (sub)contracts, which all can be regarded as ‘credit slips outstanding’ between firms. All clusters report this type of exchange as a crucial element of trust building. Respondents also repeatedly expressed their misgivings about the lack of reciprocity, although they also add that in general this is only a temporal phenomenon.
Nevertheless, Argonautics members pointed at the role of inter-firm learning in the cluster. Some of the larger firms are more outward looking and thus help smaller members to overcome certain distance barriers. There is also exchange of experiences on project planning as well as the management of flexibility. Similar benefits from inter-firm learning can be observed in other clusters. In Sarius, for instance, firms changed their approach to individual marketing inspired by one member firm. Two Sarius members initially felt marginalised, which both firms and the RSC attribute to way the cluster was initially composed. In the case of the environmental cluster, an important dimension of the learning process is that between the firms and ENTRUST. The firms present a kind of test ground for ENTRUST to experience the value of clustering as part of its ambition to deliver holistic services to SMEs. Only in S&S, one of the members preferred the notion of ‘skill exchange’ to that of inter-firm learning, which was seen a too strong a concept. Skill exchange was also seen as contributing to the performance of the cluster.

Serious power struggles have featured in some clusters. In general, the problems have been solved by a rather drastic solution: exit of what other members seen as the uncooperative firm. In established clusters, firms seem to accept that there are differences in influence, but these are generally seen as justified on the basis of the individual business capabilities and the amount of time and efforts invested in the cluster project.

A related point that can be made in this context is the role of intra-firm relations. The core participators in the cluster projects are the business managers. Since most firms are small, management lines with other staff are short and the involvement of employees happens automatically. Nevertheless, in the case of Argonautics, with some larger firms, the observed deficient level of cluster interaction may be partly attributed to the fact that only senior management meet regularly. One respondent said that it was perhaps strange that even IT staff in the firms hardly interacted, while there was a clear need for aligning knowledge flows. Also, no system of exchanging staff between firms was in place.

Finally, in some clusters inter-firm interaction has benefited from spatial agglomeration. Here some substantial differences can be observed. All Argonautics firms, some of them still dispersed, are in the process of moving to Royal Quays. In 1997, the Pegasus core members took up a new location on Willington Quay in North Tyneside (in old AMEC facilities at Howdon). According to cluster members, physical clustering yielded real benefits: “better than e-mail”. The Affinititas core firms are located on one site. Nevertheless, despite this and the strong emphasis on the cluster culture, organising formal cluster meetings often turned out to be difficult. Sarius meets on an occasional basis, and is not spatially concentrated. A compensatory factor is that S&S’s favourite meeting place is the pub. The environmental cluster, finally, does not intend to agglomerate spatially.
In a world where businesses are continuously approached by a large variety of support organisations, managing these relations is increasingly part of daily business activities. Clusters are seen as a way to overcome some of the problems which have emerged through the proliferation of support activities: information overload, support ‘fatigue’ on the side of the firms, fragmentation both in support services and time. For this report, two issues arise. First, the relationship with the RSC as core support organisation. Second, access to, and perception of the wider support community and regional policy arena.

Firms express a very positive view about the role of the RSC. Several respondents confirmed that the RSC has been able to overcome parochial attitudes, that they press to “go out”, that they “channel support very effectively”. In this context, one entrepreneur made the remark that many firms in the North East are stubbornly inward-looking. Referring to a business conversation in which he had suggested supplier names to a local firm, he stated that “even Leeds was seen as another planet”. Although many firms are still confused about the cluster concept, overcoming distance and cultural barriers is seen as a major achievement:

“Clustering helps because it encourages firms to overcome barriers: many persons are inclined to stay where they are, not to contact other firms except clients, or to go to business clubs etc. You need a certain push however to become a cluster.”

The business representative who quoted this also saw inter-firm learning as much more useful than learning from business agencies.

Because of their brokering capacities, and capacity to translate policy issues for business development, the RSC should not be regarded as an extra layer of bureaucracy. Brokering was generally effective, although various cluster members revealed that this was based essentially on a “hit and miss” approach. The firms had been surprised that a group of people with primarily a public sector background could develop such competencies. This success was attributed to the knowledge of the public sector combined with a preparedness to gain an in-depth knowledge of client firms. Another essential factor has been a high dose of enthusiasm and strong belief in the project.

A critical note can be made about the social relationship between the RSC and the firms, as perceived by some of the firms. In one cluster, the RSC was not really seen as a facilitator, but more as a controlling body:

“They [the RSC team] are also the persons with ‘money’; although their role is presented as ‘facilitating’ this is not how they are seen by businesses: they are seen as financial gatekeepers, they are in control”.

More in general, firms do not feel that they are partners in the cluster facilitator, although, at the project level, the RSC acts as a public partner in the clusters. So while the cluster projects can be regarded as public-private partnerships, the RSC itself works at a distance from the business.
level. A compounding factor is that the firms, to be able to claim funding, need to meticulously monitor their time and financial investments in clustering activities. They thus have had to adopt complex recording systems that carry a considerable bureaucratic load.

The weakest area of support, across the clusters, has been economic intelligence as part of the ‘real service’ package. Most firms confirmed that this had not been focused enough. For instance, for Pegasus the access to electronic tendering systems turned out not to match the “esoteric part” the cluster was working in. In the Sarius cluster, the attempt to gain contracts through a systematic ‘cold calling’ of potential clients tracked on the basis of market intelligence failed to generate any valuable response. Argonautics lacked a system for passing on information, and members was felt that opportunities were missed for cluster members to join in projects. In these and other clusters, material bought as part of intelligence gathering, such as directories, marketing guides, etc. had often turned out to be less appropriate and useful as initially thought. In the case of Affinitas, some of the resources assigned to intelligence were spent on marketing. The weak performance on this front should be assessed in the light of the fact that the RSC does not have true sector specialists, although staff has worked hard to improve their knowledge and build up a sectoral library. The RSC has recognised the problem of finding the right approach to intelligence provision in its own publication Information Requirement Report (July 1996). The linear approach based on developing policies on needs surveys was seen as too slow and inflexible. The Centre has thus taken steps to become more directly engaged with businesses in accommodating their immediate information needs, relying less on surveys and generic services. A recent innovation is the pathfinder, a weekly business news update with cuttings from newspapers and magazines, geared to the sectors the RSC client firms are specialising in. While some of this information is of a ‘global’ nature, it also plays an essential role in disseminating local information.

Where economic intelligence has created some degree of disappointment, the provision of support intelligence has been highly appreciated. All firms indicate that they are more aware of business support in general. Obviously, a difference should be made here between those firms with hardly any experience with public support, which are concentrated in the manufacturing clusters, and those which are were confronted with clustering through their established contacts, with, or even role in, business support activities, like many of the service firms. Argonautics members highlighted the role of both the cluster and the RSC in accessing the support sector, although they also pointed out that no follow-up application has been successful (such as for the DTI Sector Challenge).

On the position of other support organisations, quite a negative picture emerged. Business Link was seen as providing too much of a “boxed” approach. In the case of Pegasus, members saw Business Link as generally helpful but also felt that the cluster had taken over much of the task Business Link should have done. Firms were disturbed about the
continuing stream of brochures, “glossier than we could ever produce”. A real source of irritation and annoyance was the growth of parallel, sometimes even rival, support initiatives with similar objectives, including clustering. “Should the agencies not join in a cluster themselves?” a Pegasus member thus suggested.

A final business verdict on clustering

So, in the view of the firms, has clustering improved the business capacity to compete? Here it should be reiterated that most firms took a rather sceptical stance towards the cluster concept, especially at the time of joining. As one cluster member commented: “waiting for and receiving grant money is for some firms the main issue for joining clusters”. The various business interviews indeed reveal that for all firms, with the exception of some Affinitas members and the Pegasus start-up firms, access to funding has been the main reason for joining. Although funding is valued as a “clear carrot” to motivate firms, an RSC representative also complained about the perverting impact of ERDF funding: it “distracts firms from the real thing, i.e. clustering”. The entry of ERDF has also stopped the search for alternative means of financing, including the own idea of an ‘iterative revenue loop’. Another comment was that, while the firms are generally very cautious when it come down to spending, “money astuteness disappears when grant money is involved”.

On the issue of funding, different opinions can be heard. An Affinitas member stated that clusters should be able to survive on their own contracts. A Sarius member emphasised the experimental nature, and the trend towards self-governance, as main aspects of cluster development. In contrast, an interviewee of another cluster claimed that clusters should not be expected to become self-financing: “charging member firms might easily stop the distribution of the cluster philosophy”. At present, there is still discussion within the clusters about long-term financing. Creating the right approach, system and practices does not appear to be easy.

On the concept of clustering itself, firms had been confronted with an identity problem. This may be attributed to the fact that the clusters were set up with a strong production orientation, thus creating tensions between ‘individual’ and ‘collective’ business activities. In presentational and marketing terms, for instance, the problem often arose that there were “too many badges”, to quote one entrepreneur. What should be done exactly under the banner of the firm and the cluster? To what extent should the cluster and firms do similar or different things? Some firms still saw it as too much an academic concept, while others will still unsure about the legal dimension. One member emphasised the dynamic social aspect: “essential is the mix of people, (...) it is like chaos theory”. Another member however also stressed the importance of formalisation, not so much to facilitate collaboration but to ensure commitment. It was also confirmed that the use of cluster in business support would reduce selectivity in business targeting. One commentator, finally, saw the value
The notion of shaping resources that are rooted in the regional economy rather than in single firms or clusters finds recognition within the RSC. For instance, referring both to Pegasus and Argonautics, the Pegasus Business Plan (1996), states:

“The benefits of these new opportunities will generate wealth and create employment in the region. They will also ensure that the region is able to strengthen its research and development base and increase the capacity for small indigenous firms to expand” (p.6)

In a recent strategy document of Argonautics, it was recognised that Argonautics should be seen as a small part of the overall training solution for the maritime industry in the region. A major recent initiative is the establishment of a skill centre. Following on internal training activities financed under the UK government Skills Challenge (in AutoCad, specific design and analysis programmes such as Tribon and Cosmos, and Datamodelling), the Argonautics Skills Training Centre which will be developed in a partnership between Argonautics, Tyneside TEC, TME apprenticeship scheme, South Tyneside College and the RSC. Assistance is obtained from the local Skills Challenge project. The project has also attracted ESF funding. Early 1998, a manager was appointed and the centre was established at Royal Quays adjacent to the Argonautics firms. Although developing a training centre is seen as a vehicle to business improvement and potentially income generation, it also includes an ‘altruistic’ element of region-wide skill development.

Another potential route for Argonautics to contribute to shaping ‘club goods’ is through interacting with the Northern Offshore Federation. While some contacts have been made, the outcome so far has been disappointing. Although some firms are member of the NOF, the nature of the association - closely tied to the development of the larger firms in the region - appeared to make it difficult to build a link to an innovative approach to the development of SMEs active in the same industry.

Pegasus, in turn, is creating cluster assets through the joint facilities at its new location includes a testing laboratory. More significantly, Pegasus
members are actively engaged in the development of the North East Pipeline Group. This organisation emerged from an original interest in renewable energy as part of the Northern Energy Initiative, and is supported by the Technology Centre in Sunderland. The intention is to work on skills improvement, to create an own identity outside the region as well as provide a platform for internal lobbying. An important task will be the forging with links to other agencies, which so far has not been adequately exploited. The organisation will be modelled after the NOF. The cluster members regard the Group as a kind of cluster development in a ‘broader spectrum’.

An important area of ‘clubs goods’ lies in the domain of technological developments. Both Argonautics and Pegasus members stressed the role of links with regional universities and other centres of expertise. Unfortunately, at present links were seen as weak, particularly with universities, and with little scope for improvement (specific research projects excepted). For the marine sector, universities are seen as “being behind”, acting in an “ambivalent” way, as “pursuing their own agenda”, and acting primarily in their self-interest (for instance through high charges). Pegasus hopes to improve relationships and align interests through the new pipeline association. For Argonautics, it is expected more effective links can be built up through the Skills Training Centre.

Regional asset development also plays a role for S&S. One member is involved in the IT strand of the Sunderland Business Forum, which is joined by about twenty fee-paying firms. One activity has been is making a presentation of business consultancy to the legal profession. This forum is part of the Service Challenge, supposed to provide a service support infrastructure for manufacturing. The Challenge identified sectors, comparable to clusters, and developed initiatives for the legal, finance, IT sector etc.

Affinitas has been involved in a study on the printer industry in the region, which started an NDC initiative to compare the Newcastle area to Leeds. The study has been taken up by the British Printing Federation. The sector is much under threat in Newcastle because of a lack of specialisation and a division of labour. Printer companies tend to opt for ‘Jack of all trade’ attitudes that seem to induce detrimental forms of competition, in which work is increasingly subcontracted to outsiders. The initiative is thought to improve the division of labour and internal trading – with printers focusing on printing and specialised firms like Affinitas undertaking the design and performing as ‘systems integrators’. The follow-up from this project is still to be seen.

For the environmental cluster, the regional dimension turned out to be quite problematic. One respondent argued that, in the past, the development of an environmental strategy in the region has been “woolly and interest-driven”. Through offering free, subsidy-based services, larger institutions, particularly universities, have substantially curbed the possibilities for small firms to develop commercially viable lines of business. Apart from the current emphasis on EMAS, it is hoped regional
expertise and business can be built up through industrial conversion projects (such as in the context of the European Konver programme oriented to defence conversion).

The discussion of ‘club goods’ points at an interesting shift, that from clustering leading to closed networks to processes of ‘institution building’, illustrated by cluster-specific associational forms like the Pipeline Group and region-wide software initiative. It will come as no surprise that for the firms this shift has contributed to the confusion about what clusters mean. While recognising the value of the different forms of networking and associating, one respondent blamed the support sector for failing to bring more clarity and formalisation. Characterising both the closed RSC networks and the open associational forms in cluster terms was seen as particularly foggy:

“Support agencies seem to take the concept, bending and twisting it. They call it all the same thing. Businesses end up totally confused”.

The distinction between network orientation and ‘institution building’, as made in this study, may thus help to bring more clarity.

Demonstration effects

The role of demonstrating innovative practices to the region is highly rated by the RSC and the firms. Promotion is a core activity of the RSC, through its newsletter, the local press, networking at regional and national levels, and its website. The RSC also manages a web-based business database with information on local SMEs. The RSC benefits from the fact that its approach and achievements are well appreciated and recognised by important actors within the region and beyond (including the DTI and the European Parliament, see below) as well as the wider public. The story about the launching of the six clusters above already shows the significance of demonstration effects. Various recent clusters developed from grassroots emulating the experiences of the first clusters.

Among the local business community, not all response is favourable however. The high levels of support that went to the first cluster, Argonautics, for instance, were envied by local firms in the same industry. The RSC was also confronted with the fact that clusters took the shape of “mini-oligopolists”, becoming groups of well-supported and well-networked companies with optimal access to funding and local markets. While, to some extent, this may be unavoidable, the closed and formal nature of the cluster poses a problem. The micro-cluster structure facilitates the creation of commitment and the nurturing of collaborative attitudes, but it is less clear how it may contribute to the modernisation of sectors at large. Each initiative to broaden the cluster development, such as through the formation of a wider cluster association should thus be welcomed. In principle, the RSC is open to clusters in similar sectors. In the pipeline sector, another group of firms was assisted by the Centre, but no cluster emerged in the end.
A related point of discussion when dealing with SME development at large is that of 'picking winners'. Outside observers, confronted with the client profile of the RSC, have pointed at the fact that most of the firms are operating in hi-tech sectors, and are generally led by well-educated entrepreneurs. Why should these firms receive support, while there are so many backward firms around? One reason for this strategy, as presented by the RSC itself, is the ambition to anchor vital skills and assets to the region, and to modify the prevailing business culture. Their activities may be associated with the more successful companies and business persons in the region, but only in this way a region in decline may hope to regain some of its past innovative potential and competitiveness, and to overcome a culture dominated by distrust and petty rivalries. This was also suggested in the initial formulation of the cluster approach in the CURDS documentation, which recommended identifying locally strong companies that could act as drivers of the clustering process.

When confronted with the issue of ‘picking winners’, the firms generally accepted that, at present, the cluster initiative was serving more advanced firms in the region. However, the firms also put forward various reasons why this should be regarded as the most appropriate strategy. The RSC was seen as being “realistic about picking winners”, working with those firms which may benefit from clustering but which have also reached a level where they may contribute substantially to regional competitiveness. None of the firms can be considered as an outright winner from the start, especially when the more recent clusters are taken into account. On the other hand, clustering would not work with more marginal firms, some respondents claimed, and certainly not with start-ups. One observant stated that cluster initiatives should deliberately target ‘winners’, as to maximise benefits and demonstration effects. Another argument was that cluster initiatives require a certain amount of interest and commitment from the firms, and that the RSC did not create any barriers of entry. That is, any firm really interested in clustering would receive support. One observer nevertheless agreed that some form of ‘low-tech’ strategy might be envisaged.

**Effectiveness of regional business support**

There is no doubt that the RSC presents an innovative contribution to the local network of business support. Because it largely plays the role of a broker, the organisation does not compete with other support organisations, and even enhances the accessibility and therefore effectiveness of business support at large. As revealed in the last section, this point is also made by business respondents. At a more strategic level, the position of the RSC in the support infrastructure is now part of the extension of the centre’s activities from the local to the regional level. This will be discussed in more detail in the next section.

From the perspective of using local resources, the RSC is highly cost-effective. In 1997, RSC was nominated for the Award for Business Partnerships Awards granted by the Local Government Chronicle.
Although the RSC did not win, the nomination underpinned the national recognition of the initiative. In particular, the way the RSC was able to leverage local resources to attract various forms of funding for the creation of long-lasting relationships between firms was appreciated. Besides ERDF, additional funding for training was acquired through the DTI Sector Challenge for Pegasus and the NT Skills Challenge for Argonautics (with a bid in for ESF). The DTI subsidy for Pegasus was the only successful bid for DTI sector challenge in the North East. Table 20 summarises total funding and cost levels.

Whether the RSC offers ‘value for money’ when total public expenses (included leveraged) are counted is more difficult to say. Up to 1998, the RSC helped the clusters to create 118 permanent jobs, and 128 temporary jobs while the clusters claim that another 256 jobs has been safeguarded (based on RSC information). It would not be fair to calculate expenses-per-job since this would leave out demonstration and promotion effects, and the longer-term impact on regional networking and specialisation. It would also negate the innovative and dynamic character of the project, which makes a simple judgement on comparative efficiency grounds unjust. Compared with many other local support organisations, the RSC has a low cost profile, in terms of its office use, staff, additional expenses and promotion.

<table>
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<tr>
<th>Project Element</th>
<th>Argonautics</th>
<th>Pegasus</th>
<th>Sarius</th>
<th>Affinitas</th>
<th>Environment</th>
<th>S&amp;S</th>
<th>RSC</th>
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<td>4652</td>
<td>17730</td>
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<tr>
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<td>25907</td>
<td>0</td>
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<td>0</td>
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<td>0</td>
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<tr>
<td>R&amp;D/Product Development</td>
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<td>71179</td>
<td>191865</td>
<td>23802</td>
<td>40000</td>
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<td>17912</td>
<td>67566</td>
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<td>6750</td>
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<tr>
<td>Other</td>
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<td>0</td>
<td>0</td>
<td>14000</td>
<td>14000</td>
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<tr>
<td>Total subsidy</td>
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<td>413690</td>
<td>237555</td>
<td>205966</td>
<td>100000</td>
<td>168750</td>
<td>560801</td>
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<td>219545</td>
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<tr>
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<td>194145</td>
<td>108230</td>
<td>92952</td>
<td>46000</td>
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<td>256847</td>
</tr>
</tbody>
</table>

Source: RSC

Embedding of cluster initiative in regional specialisation strategies

Regional economic specialisation in the North East, as envisaged primarily by the Northern Development Company, is developed along three major strands: high volume (automotive, microelectronics, textiles, etc.), low volume (machine tools, offshore, shipbuilding, etc.) and process industries (chemical), with services sometimes added as a fourth segment. The RSC primarily targets firms in the latter strand, complemented with service activities that can also be regarded as low-volume, within one regional area (North Tyneside). The essence of low volume is that is it contract-based, and that a large part of the business activities (marketing, management, cash flow, employment) revolves around the sequence of
bidding, tendering, planning, producing and servicing of highly customised outputs. Initially, there was the intention to establish a ‘low-volume’ engineering centre of excellence on the northern bank of the Tyne (ECAI), as part of the ‘Three rivers strategy’, complementing the ‘high volume’ centre on the bank of the Wear (CAMM) and the process-oriented centre on bank of the Tees (EPICC). ECAI, the European Centre for Advance Industries, was initially seen as providing, among other activities associated with marine engineering, a new home for the RSC and various clusters. ECAI was presented as a flagship regeneration project on the north bank of the Tyne symbolising the striving for economic renewal in the area. However, when Siemens announced its massive investment in a silicon chips factory on Tyneside, ECAI was ‘hijacked’ and renamed as the North East Microelectronics Institute - Centre for Advanced Industries (NEMI-CAI). Also the initial plan to include workshops in the building, in addition to office space, was dropped. An important new lodger was Applied Materials, a major supplier to Siemens. While the building still provided space for SMEs, its re-profiling, together with relatively high rents, impelled several clusters to look for other opportunities.

RSC activities are also embedded in the regional economic policy through the SPD (Single Programming Document), the regional strategy document to obtain Objective Two funding from the European regional funds. Clustering was explicitly part of the SPD 1994-1998. In earlier and current SPDs, a sectoral strategy is advocated to which the RSC has frequently referred to in its cluster application. It should be noted that the RSC is a small agent in the world of economic and business development in the North East, something which is also observed by the firms. It has however been very keen on exploring and establishing partnerships with other organisations. The RSC benefits from its close ties with the local authority, although the latter’s capacities in the area of economic development are limited. Another important link is that with Tyneside TEC. This relationship was troubled somewhat when Tyneside Tec started its own overarching cluster programme (Intramesh), which partly interfered with the RSC activities. Further links have been developed with local enterprise agencies, development corporations etc. One area where the RSC has made a significant contribution, as illustrated in the section on implementation, is creating increased appreciation for the role of services, even if they do not directly add to exporting.

One current issue in the regional role of the RSC is that of a transformation from a local into a more regional centre, initially confined to the Tyneside area. This ambition existed almost since the first conception of the initiative:

“An extension of the Real Service Centre project principle, in conjunction with the Business Link networks would be able to provide for the information requirements of the development clusters. Through a facilitated network with the Regional Technology Centre, and further networking with the regions’ universities, the potential for small firms to utilise the latest
technology (through their cluster) and techniques would be greatly enhanced.” (Hastie, 1995, p. 7).

Similar comments can also be found in the RSC business plan. Several firms also mentioned this extension as a major step forward for the centre, also because in practice various clusters already contain firms outside the North Tyneside boundaries. With the coming extension of the RSC funding, a promotion to the regional level is expected. The linking with Business Link (or successor) may involve a closer co-ordination with the Business Link Business Development Managers, which may help the RSC in assessing and reviewing individual company practices and performance. Fundamentally, by strengthening its networks and position in the region, the RSC increasingly faces the task of countering the prevailing regional focus on large firms, notably foreign investments. Besides the political support from North Tyneside Council, it is only thanks to the availability of generous funding for SME support from outside that an organisation such as the RSC can thrive. The recent succession of large company closures, including, most spectacularly, that of Siemens, appears to have helped to strengthen the position of SME-oriented strategies.

A final, and highly sensitive point, is the role of the regional political culture in the development of the RSC. The North East is generally considered as a region with a strong regional identity, and is renowned for its strong ties between core business leaders, core political organisations and support institutions. The downside of these strong ties is that they work in an “Old Boys’ Network” fashion. Many of the acclaimed partnerships, to quote one business representative, reflect effective “marriages of convenience”. In the case of business support, the boundaries between the provider, receiver and assessor of support and funding are often blurred. Indeed, some firms pointed out that many of these activities could be described as “incestuous”. One observant cited the fact that, in the case of another network oriented initiative, the very same entrepreneur sat on the Board of the project, while being one of the supported firms and having being assigned a contract for the project evaluation. Several other instances of manipulation, especially in ERDF-funded programmes, were also quoted. The RSC was seen as an organisation which, since the centre works at the public-private interface, cannot ignore or shut out the impact of such behaviour. However, the centre is regarded as being honest in its own development and choices. One client firm explicitly recognised and appreciated that the RSC was not part of the “Old Boys’ network”. A future problem may that, with the extension of its remit to the regional level, and further embedding of activities in regional development strategies, the RSC will become more implicated in the intricate political development in the region.

7.2.4. Conclusions and recommendations

The RSC has been widely recognised as an innovative and promising approach to business support. Besides the CLES nomination already mentioned, this includes a recognition as one of the few innovative UK projects in a lecture for the European parliament by the MEP Arlene
McCarthy (Epades report a4-0126, 10-4-1997, together with EMI-CAI, the Glasgow Regeneration Fund, the Merseyside Special Investment Fund, the Ayrshire three town project, and Eastern Scotland capacity building projects), a recognition as a unique project by the former Labour shadow minister of science and engineering, and a recognition by the European section of the DTI as a good example of a local development project based on networking.

On the other hand, the RSC itself recognises its limitations and shortcomings, even when it comes down to the crux of its existence: clustering. Not only is the concept still an enigma to most of the firms, also one RSC representative stated that “the jury is still out on clustering.” So, what is the verdict of the present study?

The analysis here has found a dynamic organisation that has evolved through learning and feedback. The RSC is highly committed to its mission, and genuine interest in and care for business development. While it operates in highly competitive funding environment, the organisation deserves credit for the way it has continued to follow its own agenda, even keeping a long-term view on business development. While it is dealing with complex issues, such as trying to change business behaviour, and to facilitate new forms of social interaction, much has been done to make objectives and activities transparent not only in funding applications, but also in other publications. Furthermore, the RSC can be described as highly cost-effective, particularly when gauged in terms of what is spent from local public funding. The organisation has learnt to cope with the dominant political culture in the region. The fact that it links sectoral targeting to SME development rather than large firms is a welcome alternative in a region where most policy efforts are geared to attracting and pleasing foreign investors.

Similarly, establishing longer lasting links with firms, within a medium to long term development perspective, provides a promising step in the development in business support. In this respect, the RSC should not be seen so much as an alternative to existing forms of business support, but as performing a brokering role between firms and service providers. The clustering activities help firms to articulate their support needs better within a longer-term strategic perspective. Support may thus move away from the situation where it primarily responds to business wants. Such wants often do not reflect real needs but are merely spontaneous reactions by entrepreneurs confronted with the question of how they could benefit from public support (in many cases just responding to new fads promoted in business support brochures).

One of the most positive points is that the RSC, despite the modest reach of its activities, has contributed to cultural change in the region. Many actors in the region, both within businesses and other institutions, appear to have a better understanding of the benefits of collaboration and collective action around SMEs. The way the RSC has undertaken its brokering activities has received much appreciation, both from firms and other regional actors. Within the clusters, the Centre has been able to
create a level of trust and common direction sufficient to counter most of the centrifugal forces that hit each association of businesses. Within the area, new inter-sectoral links have been created and public-private partnerships established that help to counter fragmentation in the local economy. Businesses themselves are keen on investing in region-wide associational initiatives thus contributing to regional cluster-oriented ‘institution building’. A question that remains open is the overall sectoral profile of the centre, that is, its scope of sectoral targeting. So far, this has been largely driven by local opportunities. The strengthening of the regional focus, with a possibly stronger embedding of the Centre within regional development strategies and links to the coming RDA, may perhaps provide a platform or making a more strategic choice here.

A critical point is that of the RSC in its role of facilitator. The emphasis on facilitation, rather than cluster building, is considered part of good practices. The idea of facilitation matches a bottom up cluster composition and development with a top-down triggering and guidance of the clustering process. It is clear that over the past years, the RSC has tried to improve its approach to facilitation. Most of the clusters emerged bottom-up, responding to local business opportunities. In one instance, where the centre it tried to create a cluster itself, by a process of top-down selection, it found how difficult it was to nurture inter-firm solidarity and synergy. Nevertheless, the top-down facilitating role of the RSC should be put in further perspective. The RSC itself emerged in a bottom-up fashion at council level, and at a European level it is regarded as a grassroots initiative. However, its roots lie in the public sector not in business. Despite the good intentions of the RSC, a distance can be noted between the Centre and the cluster members. Many firms perceive the Centre as a ‘gatekeeper’, both in organisational and financial terms. The question thus arises to what extent businesses could have more ownership of the Centre’s activities, by stronger business involvement at a more strategic level.

On the other hand, there is also the issue of how intense the linkages with particular groups of firms should be. A general problem with creating long-lasting client relationships is that the survival of the firms, rather than regional interests, start to dominate support activities. Obviously, many factors make an emphasis on survival important, such as the continuation of the present projects, the value at demonstration effects, and most pragmatically, its translation in positive performance indicators in funding assessments. What should be prevented, however, is that clustering support turns into a style of nurturing ‘babies’. Over the years, the RSC as well as other responsible bodies have become more aware of this issue, and this has led to a reduction in direct subsidies per cluster and an ongoing debate about exit strategies. Nevertheless, this is a theme that may require more reflection within the RSC and the setting of local/regional support development strategies at large.

Intelligence is another issue for debate. Will the RSC really live up to its name - a provider of customised services along cluster lines? The
provision of intelligence as real services should perhaps be a more central activity. Of course, a name does not mean everything, but this evaluation has confirmed that intelligence has been an area of disappointment. No easy solutions can be offered here, since the provision of appropriate intelligence is a highly demanding task (changing the name, as admitted by the RSC itself, would be a mistake at this stage). It requires a constant interaction between firms and the real service provider, as well as a lot of sectoral expertise. At present, it is particularly the latter that is missing. A suggestion, therefore, is that further links are developed with centres of expertise in the region, and to participate, where feasible, in the development of sectoral strategies. Regarding the links with client firms, a central question is how the Centre can widen its business scope within the sectors it is targeting. One idea could be to offer different routes for cluster facilitation, some more intense based on funding applications, others perhaps in a lighter way through a demonstration process. This might also involve a move away from the strongly formalised approach to clustering, which at present seems to curb flexibility beyond the formal cluster boundaries. Where formal clusters are supported, the downward trend in cluster size should be countered. A number of around seven firms seems to be an appropriate minimum. A related issue is that more engagement could be sought with employees in the firms.

A final point is the intelligence accumulated and employed by the Centre itself, related to business clustering. The cluster model has developed through initial contact with several publications and ideas, including work from CURDS, authors on small business development and various official publications. This has led to a particular interpretation of clustering, which may be regarded as strong in its orientation towards business collaboration and asset development, but weaker in the way it copes with issues of flexibility and wider sectoral embedding of the clusters. Obviously, there have been good reasons for adopting a particular approach to clustering. The local context in which the Centre operates, with its lack of a networking culture and absence of entrepreneurial attitudes, required a specific translation of clustering concept and the idea of a real service centre. Also constraints imposed by funding regimes and other institutional factors have had an impact on the kind of approach adopted. Nevertheless, it may be useful for the RSC to review how insights into small business development are interpreted and applied. In particular, a strategy may be required to keep up-to-date with the literature and debate on small business development and business support. Only in that way, will the Centre be able to maintain its innovative profile. Hopefully, a more stable funding stream can be found for the Centre, to allow it to move valuable time from frequent re-applications to business support.
Chapter Eight. Lessons for regional economic development and business support

Within the context of the ADAPT-CORE project, this study has focused on cluster initiatives geared to the improvement of SMEs as part of regional development policies. The core question has been:

*How can cluster-oriented forms of business support improve the way SMEs contribute to regional employment and wealth?*

To answer this question, the project was structured in three stages:

1. the development of the cluster concept
2. the design of a research methodology
3. case study analysis.

In this last chapter, conclusions will be presented along two lines. The first section will present the research outcomes in a more academic fashion, with specific attention for the list of issues presented in the Pro Forma. The second section will contain the more practical recommendations for policy-making.

8.1. Research outcomes

8.1.1. The CORE of the ‘cluster’ concept

In many respects, the notion of *clusters of competitive advantage* represents a very open concept. Indeed, one suggestion quoted in Chapter Three was to see clusters as a menu of ideas and policy options to deal with variation and diversity. The ‘seven steps’ along which the cluster concept was presented illustrated how this diversity has come about. Being a novel and appealing concept, ‘clusters’ were associated with a range of ideas on spatial-economic developments which have pulled the cluster concept into different directions. These ideas included the debate on innovation systems, on supply chains, on SMEs and the role of associations in economic development.

Despite this variation, the present study held on to the idea that there is still a ‘core’ to clusters, rejecting the ‘menu’ solution. The ‘core’ of clusters, as advocated here, is based on its strong link with the concept of ‘competitiveness’, as well as with some other generic dimension of regional development (specialisation, identity, spatial proximity, see Fig. 2 on Page 92). More specifically, the cluster concept derives its value from
the way it links the structural level of regional development with the level of business development and networking. In the words of Chapter Three:

It is this marriage between the structural level, as depicted by illusive cluster maps, and the relational and institutional aspects at the lower level, as captured by the rich vocabulary on networking, associations, governance structures etc, which has made the concept so influential.

Both the methodology and case study analysis have been heavily influenced by this marriage. What has been stressed in particular, however, is that the link between the macro of regional development and the micro/meso level, while providing distinct advantages in terms of business and regional competitiveness, is not necessarily an easy marriage. On the contrary, aligning the interests of the region and businesses presents a constant challenge. By structuring the methodology around this issue, the case studies clarified the tensions arising between business development and regional interests. The case studies also pointed at possible ways policy-makers can deal with this issue. These two themes will now be discussed in more detail.

8.1.2. The research Pro Forma and main results from the case studies

The cluster cases under study consisted of policy initiatives as well as various associational initiatives developed by business actors with substantial public backing. Setting out a methodology for examining cluster initiatives, the research Pro Forma, as developed in Chapter Four, started with an adapted form of a policy cycle, followed by issues taken from the business and regional perspective. This section will present the main outcomes per Pro Forma theme.

The policy cycle

Conception/launching: While the various case studies showed considerable variation in objectives, cluster approaches and implementation, most are somehow grafted onto the work of Porter. What is interesting is how the general (Porterian) concept of clusters has been locally interpreted and translated into practical initiatives. In the Tyneside case, for instance, a Porter-based recommendation of cluster-oriented approaches, combined with experience gained in ‘Central Italy’ (particularly Emilia Romagna), inspired the establishment of an innovative organisation geared to the facilitation of business clusters among SMEs (RSC = the North Tyneside Real Service Centre). Another application on Tyneside was developed with the aim of attracting and servicing foreign investors, especially through the regional development agency (NDC = Northern Development Company). Here, the cluster concept, particularly through its supply chain dimension, underpinned the development of ‘value added’ embedding strategies. The German case studies concentrated on the way clustering could contribute to structural improvements in the regional economy through a relational perspective. In particular, they endorsed the idea that innovation could be stimulated by
nurturing collaborative attitudes and collective learning processes. Thus, in nearly all cases, a specific threat (relocation, ongoing rationalisation, business closures) or clear opportunity (embedding investors, move to quality wine) triggered off the cluster initiative.

**Support agencies and funding regimes:** The agencies that initiated the cluster projects vary from ‘pure’ public sector (Aragón), partnership arrangements (IAT = Institut Arbeit und Technik in Gelsenkirchen, RSC), to business associations with public support (Tyneside offshore). Overall, the research confirms the idea that a public/private mix will generally provide the best support arrangement. Public sector participation is vital for funding, for the embedding in regional policies and facilitating demonstration effects, while private sector participation is important for creating commitment, encouraging bottom-up initiatives and customisation of support. Funding regimes showed a similar degree of variation. Many initiatives relied on short-term, project-based funding. While this is understandable, given the innovative nature of the cluster approach, not all initiatives seem to have had sufficient time to develop and show their impact. Viewed from a policy cycle perspective, therefore, cluster initiatives suffer from the fact that most results become manifest only in the medium to long term, long after the time when new funding has to be applied for.

**Cluster mapping and audits:** Most cluster initiatives were not preceded by in-depth regional analysis (comparable with Porter’s cluster mapping). Some grew from bottom-up in response to specific needs or opportunities (Tyneside); others developed their core themes and targets through self-auditing (Bergisches Land). Audits played a role in the acquisition of funding (RSC), or strategic reevaluation (NOF = Northern Offshore Federation). In general, the results endorse the idea that ongoing learning and feedback, with a strong participatory role for business, is a more appropriate approach than a linear scheme, in which policy design is based on ex-ante identification of ‘business needs’. Specific SME audits were carried out by the RSC and in Bergisches Land, which helped to tailor the initiatives to their client groups.

**Setting objectives:** Tracing cluster objectives revealed a much more varied and dynamic picture than initially envisaged. The variation in objectives is particularly striking. While none of the case studies fails to mention regional competitiveness, and all somehow invoke a notion of the benefits from relational assets, there is less clarity about specific goals. This is due primarily to the fuzziness of the cluster concept and the innovative character of the initiatives. Cluster-oriented ideas are employed to serve specific regional purposes, such as preventing relocation, improving local linkages, facilitating inter-firm learning etc. In translating the fuzzy notion of clustering into concrete initiatives, however, the setting of priorities largely reflects the context in which projects are developed, and the specific ideas of the decision makers at the point of planning. Variations stem from context conditions (including terms of funding and evaluation), as well the specific preferences of the initiators.
The explorative and often arbitrary nature of setting objectives is confirmed by the way objectives appear as moving targets. The RSC has shifted from an intensive process of cluster building to more emphasis on facilitating and more generic forms of business support. The Aragonese case shifted from creating new limited companies as local leaders to a more gradual process of concentration. In Bergisches Land, the initial objective of creating regional assets by linking two sectors was overtaken by the priority of facilitating inter-firm learning. In all these cases, the fact that firms were engaged on a longer term basis contributed to these changes and learning processes.

**Implementation through brokers:** To achieve their - albeit often moving - targets, the initiatives generally rely strongly on the input of brokering and expert contributions. Brokering is especially important for developing the relational dimension of regional economic development. The present study has provided ample evidence of the crucial role of brokers. A distinction can be made between the clusters geared to associational strategies and ‘institution building’ at industrial/sectoral level, and to more network and learning-oriented initiatives. For the first category, the associational initiatives, the role of initiators from the sector itself have proved to be crucial (ASSA = Automotive Sector Strategic Alliance, NOF), either as triggers or even as coaches throughout the project. The same applies to the local wine regulators in Aragón.

In the case of the successful networking/learning initiatives, brokers and experts with an industrial background also proved to be most effective (Bergisches Land). The RSC has been able to thrive with the help of public sector brokers. This can be explained in part by reference to the specific type of knowledge these brokers embodied, knowledge that facilitated effective public partnerships and guidance with grant application. Even here, support was sought from the industrial sector. The first RSC clusters were assisted by industrial figureheads as independent advisors. Where no appropriate mediators with a business background were available, as in some of the German cases, projects had difficulties in creating commitment and trust among participating businesses. This again endorses the significance of the nature and quality of brokering.

**Cluster composition:** The nature of cluster composition is closely related to the nature of the cluster initiative. The associational initiatives are membership-based and generally open to all the firms in relevant sectors within a demarcated area. The spatial restriction was especially noticeable in Aragón, where the initiatives were geared to four specific areas in the larger region, and where the aim was to involve all the firms in those areas, but none outside. The Bergisches Land initiatives were open to all local SMEs in the enrolment phase, but were subsequently closed. The RSC clusters, on the other hand, are closed. The can only be changed by changing the membership list in the cluster contract, following the procedure laid down in the contract, thus incurring transaction costs. However, the RSC clustering service is in principle open to all kinds of SMEs in the area, with no strict application of territorial boundaries.
Evaluation and monitoring: The organisation of evaluation also depends on the nature of the initiative. There is only one case where evaluation is largely informal, based on the generally observed sectoral performance, namely, the Aragonese wine cluster. The institutional/associational initiatives, and the RSC, are obliged to make evaluations for public funding bodies. The RSC and NOF are also strong in self-monitoring and producing regular reports for the wider public. The German projects are evaluated in depth after the end of the projects, both to account for the expenditure and to draw lessons for future initiatives. The results, however, also show how much the implementation of and reporting on projects is geared towards the evaluation of processes and standards, as laid down by the assessing bodies. This applies especially to the way networking is translated in terms of numbers of participants, meetings, etc., and to the translation of the competitive position of firms into product inquiries made etc. In some cases, notably the RSC, there was a tension between the more qualitative nature of self-monitoring, and the more quantitative external evaluations. It is obvious that, for this kind of initiative, more thought should be given to evaluation methods that really contribute to improvements in cluster approaches.

8.1.3. Business development perspective: How do firms see their benefits from clustering?

Three types of business benefits have been distinguished here in the context of cluster initiatives:
1. direct benefits to individual firms,
2. collective benefits stemming from business networking, and
3. benefits stemming from interaction with support organisations.

Direct benefits: Through participating in cluster initiatives, firms may be able to improve their existing business capabilities. All the case studies confirm this, although with considerable differences in type and extent of improvements. Improving labour skills is an important result, which is shared by ASSA, NOF, the chemical industry in the Bergisches Land, and, in limited cases, by the RSC. Quality and environmental certification is supported in nearly all cases. Marketing at firm level shows advances in the RSC clusters and the Aragonese wine cluster. Quality improvements feature in the Aragonese case, the RSC clusters, and the German automotive clusters. In the same case studies, a variety of managerial issues was also dealt with. Surprisingly, innovation does not appear as a prominent issue, although attention is paid to technological issues in almost all cases. This is manifested most strongly in the NOF, which also pays attention to procurement issues.

Some of these benefits represent almost purely individual gains, in the sense that clustering has been instrumental in business-level modernisation, with certification (e.g. ISO 9000-13000) as the clearest example. Other benefits, such as skills improvement and management changes, combine individual benefits with cluster effects. This means that there are spillover effects to other cluster members or even to the wider regional economy,
and that the benefits would be reduced if the cluster disappeared. Cluster effects are most prominent in the case of marketing. While firms may again draw individual lessons from their cluster experiences, marketing efforts generally involve using the cluster and its regional embedding as a brand image. Such collective gains depend on the clustering dimension, as shown most clearly in the cases of the RSC and Aragonese wine DOC’s.

While collective benefits are referred to by brokers, policy makers and cluster analysts, it is essential for participating businesses to obtain individual benefits. For SMEs, in particular, ‘hard’ benefits are the main justification for their investments and commitment. The study confirmed that, in general, firms appear to be more interested in learning from other firms or engaging in collective lobbying than in contributing to collective cluster assets. From an SME perspective, an important aspect of clustering appears to be the social encounter with peer firms or firms in related businesses in order to improve individual business performance. The emphasis on inter-firm learning for individual benefits even occurred when the initiatives were initially grafted onto a (trade) linkage model (Bergisches Land, some RSC clusters). While the primary investment made by the business thus consisted of time and some administrative loads, returns are counted in terms of improved business performance or products. In addition, in some case studies (Aragón, some RSC clusters), firms have benefited from grants won through the cluster.

**Business networking:** The second level of business benefits consists of those gains that stem from, and are dependent on, inter-firm collaboration. This includes three types of results:

1. Starting with the emphasis on inter-firm learning, the creation of a social network and relational assets reflects such a benefit. In areas characterised by rather individualistic business attitudes, such as the North East and Bergisches Land, building trust and social networking among SMEs emerged as crucial outcomes of the cluster initiatives.

2. Another type of benefit which has emerged from the case studies and also from the associational initiatives (NOF, ASSA), is the building of a collective lobbying position. In practice, the position of SMEs appears to be less strong than that of larger firms.

3. Closer to the original cluster philosophy is the forging of new supply linkages and the shaping of a common identity, as shown by most of the RSC clusters. The NOF also presents a new approach to supply chains as part of a new contracting regime in the offshore industry. The Aragonese wine sector presents a somewhat deviant case in this respect, since changes in the production chain are framed within a transition from co-operative to more rationalised and concentrated forms of production.

The extent to which these advantages will endure remains an open question, particularly in the case of more temporary initiatives. With the RSC, it is hoped that the organisation will obtain a more permanent status. This would allow it to help business clusters to address problems that may
arise in the future, e.g., as a result of opportunistic behaviour. In this way, the organisation could help to sustain the level of social capital accumulated in the region.

**Institutional networking:** Cluster initiatives have brought firms closer together and they have also forged links between the private and public sectors. In what respects have these links served business needs? In particular, has the support sector managed to improve its reputation among the business sector? The results are quite mixed in this respect. On the one hand, there are some good examples of improved links and reputation. The most prominent cases here are the RSC and the Bergisches Land (chemical industry), although in the latter instance, the public sector remained partly concealed behind intermediaries. The benefits to firms consisted of access to information about other forms of support and assistance to grant applications. Public-private links have also been developed through ASSA and the NOF, which were able to build on already existing links. On the other hand, the automotive initiative in Bergisches Land and the Aragonese wine initiative are cases where some of the firms still regard the regional support sector with suspicion.

We can give a final judgement on this question only when the exact intentions of the regional support agencies are known, and this is the issue to which we now turn.

8.1.4. **Regional policy perspective: How should cluster initiatives be arranged in order to optimise regional benefits?**

**Anchoring cluster benefits into the regional economy:** shaping ‘club goods’: Regions will particularly benefit from cluster initiatives if the latter produce a kind of ‘sediment’, that is, nurture assets or ‘club goods’ that may serve wider purposes than the cluster alone. Practical examples of such assets are training facilities, infrastructure, support centres and industry associations. Less tangible assets are the stock of cluster-related knowledge diffused in the region, commitment of regional actors to support certain economic activities, and contributions to the regional economic identity (Figure 1). The case studies include good examples of both categories. Shaping identities is part of all the initiatives and has succeeded most in the cases of Aragón and the marine activities in the North East (both NOF and RSC). In the latter case, the development of institutions in itself presents a valuable ‘club good’ that can be used by a variety of actors. Improvements in the labour market were observed for all the initiatives in the North East, where there is perceived to be a general skills shortage in the region, and for chemical production in Bergisches Land. Contributions to infrastructure improvements have been more limited and largely indirect, notably through the interventions of core firms and associations in the automotive and offshore industries (in the latter case, the contribution to the infrastructure is manifested primarily through the arrest of further dismantling of harbour-related activities).

**Demonstration effects:** Beyond their own remits, have cluster developments infected the wider regional economy with collaborative and
associational attitudes? This does indeed seem to be the case in all the regions. In the North East, this ‘infection’ is institutionalised in the form of the RSC, which has gradually extended its sectoral coverage, while the organisation receives much attention from policy actors all over Europe. Similarly, the NOF acts as a role model for comparable initiatives in other sectors, including those outside the region. In Aragón, policy makers have embraced the cluster approach and further initiatives are expected in other indigenous sectors.

A sensitive issue remains the survival of existing clusters and cluster-related institutions. Cluster facilitators generally try to avoid failures, since, apart from posing evaluation problems, they are expected to tarnish the image of clustering and the brokering agencies. For the benefit of both the firms and the region, however, failures should be accepted and even expected. The study has shown that continued assistance geared to cluster survival may lead to a situation where client firms become the ‘babies’ of the facilitating organisation. Facilitating clustering should stand at arm’s length from the participating firms and continued assistance should be offered only at the instigation of business. Evaluations should focus less on the benefits for individual firms and pay more attention to wider regional effects and the innovative nature of the cluster initiatives.

Embedding of cluster initiatives in regional specialisation strategies:
The cluster case studies discussed here present predominantly ‘stand alone’ initiatives, which are not part of wider cluster policies. Where facilitating clustering has been extended to other sectors, as in the North East, it reflects an emergent pattern rather than a predefined strategy. In nearly all cases, however, the cluster initiatives are part of other forms of regional policy. Institution building in the North East, for instance, is closely associated with the attraction and embedding of foreign investors. The support to the wine sector in Aragón is part of a rural development policy. Indeed, even for the RSC, the focus on clustering emerged only after the local council had already started to anchor SMEs in the local economy. Nevertheless, by embarking on clustering, all these cases developed an orientation towards networking, inter-firm learning and regional specialisation. In most cases, this link contains a defensive element, i.e., the aim behind clustering is to bind existing firms to the region. The German initiatives, in particular, take such a position. The North East and Aragonese cases, on the other hand, are more growth oriented, although they remain close to existing regional strengths. A further trend towards diversification may be expected in the future, in which the ambition to nurture new strengths may grow.

The learning dimension of clusters: Clusters have been described as a specific level of social interaction and governance which allows for new forms of learning. Rather than a binary world characterised by a support sector and business clients, cluster initiatives embody an associational level with its own learning dynamics. The nature and depth of this dynamic may vary. When clustering is geared towards ‘institution building’ or an associational process, this intermediate level manifests itself as such. In
other cases, social interaction and learning are supported by the facilitating of clustering, structured in regular meetings, workshops, etc.

The extent to which learning is part of cluster dynamics depends both on the design of the initiative and the kind of chemistry emerging during the project. Projects conceived in a top-down way, where initiators leave little room for knowledge creation and reflexivity during the project, will obviously tend to be less self-adaptive than initiatives with a strong learning-orientation. A lack of learning orientation was illustrated, for instance, in the Aragonese case, where policy makers changed the project only when confronted with strong protests from within the targeted business sector. A positive learning curve could be observed with the RSC. While the initial projects were based on strong premises about the aim and means of clustering, a more open and qualified approach emerged over time, in which more was left to the client firms. The Bergisches Land, finally, showed a marked difference between a less successful project, in which much knowledge had been acquired beforehand, and a more effective project where knowledge gathering had mostly been part of the project itself. While this had been born out of necessity, rather than deliberate policy design, it gave firms the opportunity to have a greater share in the project and, therefore, a greater commitment and reflexivity.

To what extent have the initiatives supported regional learning agendas? Different answers can be given to this. In general, cluster initiatives are seen as innovative forms of regional policy and are praised for the way they support new forms of business engagement. In this sense, all the initiatives seem to have contributed to policy learning and to greater awareness of the specific knowledge needs of SMEs in the regional economy. Among firms, the initiatives have helped to change business attitudes, notably towards more openness to other firms and even support agencies. More specifically, clusters have formed bridges between firms and knowledge centres, which has contributed to the tailoring of support services to business needs. The problem of monitoring cluster initiatives remains, together with the reliance on short-term financing. This appears to limit the extent to which initiatives can be innovative and learning effects can spill over to the regional economy.

Cost-effectiveness of regional business support: Cluster initiatives, with the facilitating of networking and ‘institution building’ as a primary investment, are a cheap form of business support. With the exception of Aragón, where substantial amounts were initially spent on business transformation, this has been borne out by the various case studies. In some cases, such as the industry associations, self-financing covers a substantial part of the costs. Moreover, since they generally involve contacts between public, private and other actors, cluster arrangements appear to be a fruitful basis for grant applications, as shown in particular by the RSC. Thus not only do cluster initiatives impose a low burden on the local public purse, but they may also lever out additional sources of income.
Besides the pecuniary benefits, the cluster initiatives have proved to be effective forms of assistance, not only to facilitate clustering, but also as a vehicle for other forms of business support. The latter is particularly evident where clustering does not so much present a goal as a method of business support (learning-oriented clusters). Cluster-related institutions, such as the RSC and NOF, act as effective brokers between client firms and the wider environment of business support and grant provision. In this way, cluster-oriented ‘institution building’ appears to be a welcome complement, rather than a threat to existing forms of business support.

8.1.5. Coming together: Aligning business and regional interests:

This study started with the idea that, when initiatives are developed to support business development at the regional level, the interests of individual firms and regional actors may differ. What is good for firms is not necessarily good for the region (e.g., when firms intend to relocate business activities or curb local sourcing) and what regional actors do is not always appreciated by firms (e.g., when regional actors induce more innovative and competitive forms of behaviour among local firms). However, since the region needs the firm, and firms will benefit from a supporting regional environment, the challenge is to bring interests and commitments together. This has been a central theme throughout the discussion of the clustering concept and the case studies.

Making the distinction between business and regional interests does not mean that, in practice, a clear division can be observed between these two categories. The regional economy is a complex political world in which local firms and regional actors may have as many differences among them as between them. Indeed, other dividing lines may be identified, for instance between small-scale indigenous economic development (SMEs and related business support organisations) and large-scale production (large firms, foreign producers, inward investment agencies, RDAs). The business-regional distinction is made here specifically to put regional development strategies in perspective and to illustrate the value of cluster approaches.

The need for distinguishing business and regional interests has been confirmed in the empirical work. Too often the notion of ‘business needs’ appeared to be used in an uncritical way, in which those needs were perceived as final objectives of support. Considering those needs in the wider perspective of regional development, responding to the more global targets of employment creation and sustain local productive capacity, was a step generally not taken. On the contrary, various case studies appeared to conflate means (business development) and ends (regional development). The only exceptions here are the case of Bergisches Land, and more recently, the RSC, through their specific attention for the way SMEs are embedded in the local economy.

So to what extent have actors in the policy/support domain been able to attune initiatives to regional interest? To some extent, this depends on how regional interests are articulated in the region and how they are
presented within the specific cluster initiatives. A common trend detected in the case studies, however, is an upward learning curve. Although many initiatives start with a strong business orientation, in time cluster initiatives appear to be receptive to specific regional issues. For instance, a theme put on the agendas of many cluster initiatives is skill development. Also, in time, cluster initiatives seem to become less reliant on the originally participating firms, becoming more part of the regional socio-economic structure at an (inter)sectoral level. This makes clusters less the support vehicle of a particular group of firms and more the catalyst for the development of regional sectors. Core elements which sustain such developments are cluster assets as ‘club goods’ - associational structures, research centres, training institutes, business service centres, etc. - that underpin regional specialisation and competitiveness. This bears on what has been identified before as the crux of the cluster approach, that is, relating the structural level of regional specialisation with the relational concepts of networks, ‘governance’ and systems of knowledge accumulation at the micro/meso level.

From a business interest perspective, the remaining question is to what extent are businesses in such relational systems committed to the regional cause? Here a positive exchange can be observed. Cluster initiatives have helped firms to widen their scope of action, both through interacting with peers and other actors in the region and through looking outward to new markets and sources of information. The region has become important, not in the sense that business interaction is more localised, but that the regional environment plays a specific supportive role in business development and learning. Virtually all cluster cases show that, when this process is effective, businesses are more attached to the region. In practice, cluster settings provide a two-way flow of information. Businesses learn more about the region and its institutional capacity and variety. And businesses can voice their collective interests, their ideas about future strategies, and suggestion for practical contributions to regional development through these settings. Obviously, there are many other settings which facilitate this (e.g. Chambers of Commerce), but the cluster approach can make an effective contribution here.

8.2. Recommendations for business support: planning the route to success

A clustering strategy can be seen as a path that improves regional specialisation by changing the way a group of firms with related activities work individually and collectively. Both the start and end point of this path are specific in time and place. The only criterion of success is that the end point shows higher levels of regional specialisation and competitiveness than the starting point. Since the specificities are important, no general ‘good practice’ model of clusters should be envisaged. Concerning the various choices that have to be made, like the ones indicated in the Pro Forma, the most important aspect is thus that they are properly justified. That is, the path of development needs to be clearly demarcated and the cluster approach needs to match the ambition to go from beginning to end.
Several suggestions can be made about how to set out a development route. These suggestions are linked to the two basic development perspectives distinguished: the business and regional development perspective.

Setting objectives

With respect to the business development perspective, a first note is that public funding should not be spent on just fulfilling business wants. As a matter of principle, when such wants are revealed, they should be met in the market. If this does not happen, other ways should be sought to overcome failings in the market (for instance by temporarily subsidising commercial business service providers).

Where public bodies intervene in business development, business wants should be taken into account but the remit should go further. A core task of public support should be to make firms aware of new strategic directions and superior modes of behaviour. Indeed, it may even be argued that, particularly in laggard regions, support agencies have an important role to play in business modernisation through coaching. So support agencies and their client firms maintain complex and often delicate relationships. On the one hand, agencies are expected to customise their services as well as possible to their target group; on the other hand, the agencies pursue their own agenda of changing business behaviour and modernisation. An essential factor in enabling this interaction is communication, as a way to create commitment and trust. A specific dimension in clustering, moreover, is monitoring the communication and interaction among firms. Major problems can arise when firms feel that they are sidelined in the decision-making process or when some perceive the distribution of benefits against the investments made as unfair. Good practice is reflected in a feeling among client firms that these issues are addressed in the support agency’s approach.

An additional point is the way intensive interaction between firms and cluster facilitator helps to improve the access to and delivery of business support at large. Recent decades have seen a proliferation of support initiatives and organisations in many countries, often resulting in much confusion and even aversion among firms. Cluster institutions such as real service centres have been presented as agencies well placed to broker, in a ‘one-stop’ fashion, between firms and the support sector. While this involves an extra step in the support process, it is generally considered as good practice because of its contribution to support impact and effectiveness.

The regional policy level, on the other hand, presents the most difficult issues. In an ideal world, one could give some indications of what good practice should entail in policy terms:

1. a link between cluster initiatives and wider sectoral strategies,
2. a balance between bottom-up cluster initiatives and top-down mapping and facilitation of clusters,
3. a position of a facilitating agency as a spider in a web of support activities, and
4. a system of monitoring and accountability that secures proper spending of public finance.

In the real world, however, innovative approaches often meet resistance from other, more established organisations. Not only among firms but also among the support sector, they thus face an uphill struggle to get their message across. In some cases, therefore, the most appropriate short-term strategy may be one of tactical isolation rather than embedding.

What remains vital, nevertheless, is the way cluster initiatives work to the benefit not only of client firms but also of the region at large. Good practice in regional economic terms may thus include the creation of certain sector-specific assets, such as information points or training centres, accessible for other firms in the region; it may also include the stimulation and monitoring of demonstration effects, notably in the area of changing business behaviour and the aptitude to collaborate. A tricky issue in this context is that of picking winners. Cluster initiatives generally aim at presenting a model case that should be followed up by others. Therefore, choosing firms that are not the most needy in a region may reflect a good approach. However, a core question is how the initiatives reach out to more marginal parts of a regional economy. Only by achieving that, may cluster initiatives be expected to make a real contribution to economic development and sustainable employment creation.

Learning as goal and method

Regarding cluster facilitation, it is important that the support organisation works and sees itself as a learning organisation. In the different steps from initiation to evaluation set out above, the interesting issue is how the different approaches and decisions are made transparent and justified, and how this process has changed from cluster to cluster through a process of learning and feedback. Pre-support audits are potentially vital sources of information, although in many cases a more gradual approach of discovering needs and capabilities may be preferred. Setting objectives is essential, and they should be specified and clarified on paper. Yet, setting objectives should be seen as an ongoing process. Clustering involves a dynamic process, which may be accompanied by changes in objectives and strategic direction. Monitoring and evaluation, finally, should go beyond the organisations to which the agency is directly responsible (such as funding bodies). Because the project is funded publicly, and because of the significance of demonstration effects, the projects should be made transparent to a wider public.

Clustering in practice

This study has explored a variety of cluster-oriented initiatives. In addition to the general comments already, the following more detailed comments can be made on the basis of the cluster analysis:

- Sharp differences exist in the approaches followed, particularly between countries. This is largely due to the variations in support structures and the wider context of business support and regional policy. Yet a common factor in all cases is the wish to change business
behaviour and instil collaborative attitudes, within the broader ambition to strengthen the regional economic structure.

- There are strong variations in what clustering means for various support agencies and firms. Sometimes clusters are the final goal of an initiative, and their continuation is seen as imperative. In other cases, clusters are more a method serving other purposes. Nonetheless, the projects always help to overcome business isolation and improve strategic direction.

- A shared problem for cluster facilitators is how to motivate firms. Many firms join primarily to acquire access to the public sector and thereby funding opportunities, while they are often sceptical about inter-firm collaboration and partnerships.

While refraining from postulating a ‘best practice’ of clustering, various points of good practice can be identified:

1. clustering should be interpreted as a dynamic process, which requires strong feedback and learning within the support sector as well as from and among firms;
2. cluster initiatives require regular reviews and updates of objectives and strategic directions, based on in-depth sectoral knowledge which goes beyond the direct wants of the firms involved;
3. transparency should be part of communication not only to the organisations directly responsible but also to the wider community;
4. support projects should avoid too much engagement with client firms (especially in the long run);
5. instead, clustering should evoke strong demonstration effects within and across sectors;
6. clustering should take an integral approach of business development, which avoid to be fixated on innovation; issues of positioning and modernisation may be as important as innovation;
7. the right balance should be developed between brokering activities to facilitate clustering and the provision of customised economic intelligence.

A summary of the recommendations is included in Table 2.
References


Gobierno de Aragón; CREA; CEPYME; UGT; CCOO (1996): *Acuerdo para el desarrollo económico y social de Aragón*. Consejo Económico y Social de Aragón, Zaragoza.


