# Improving the Quality of Organisational Policy Making using Collaboration Engineering

# Improving the Quality of Organisational Policy Making using Collaboration Engineering

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*To my parents, whose love and support made their dream a reality*

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# Contents

# Preface

Policies are a key requirement for successful organisational decision-making. The creation of such policies is a collaborative process, and the quality of that collaboration has a profound impact on the quality of the resulting policies and their acceptance by the stakeholders involved. In this research, we examined ways to support the improvement of collaborative policy making quality, for which we focused on the use of techniques and methods from the field of Collaboration Engineering (CE).

CE is an approach to designing collaborative work practices for high-value recurring tasks, and to deploying those designs for practitioners to execute for themselves, without ongoing support from professional facilitators. This research offers a theory to guide the design of quality collaborative organisational policy making processes and of the resulting policies from these processes. We provide metrics that organisational stakeholders can use to define high quality policies from their collaborative policy meeting efforts, quality design dimensions that collaboration engineers can use to design a collaborative policy making process, and a collaborative policy making process design object that organisations and their stakeholders can use for better policy making. The theory's viability and applicability is demonstrated in the four case studies.

It would be absurd for research that addresses collaborative organisational policy making to have come to light without the support of, and collaboration with, a number of colleagues and friends. To begin with, I would like to thank Erik Proper, Gert-Jan de Vreede (GJ), Patrick van Bommel, and Gwendolyn Kolfschoten, for their continuous words of wisdom, encouragement and patience, and for guiding me towards this milestone in my academic career. Their unabated friendship during my entire study period was an additional motivational factor. I was very privileged to meet GJ. He inspired me and helped me to better grasp my subject. I greatly value the advice and suggestions he provided throughout my research.

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# Chapter 1

# Organisational Policy Making, Information Technology, and Collaboration Engineering

## 1.1 Introduction

In order to regulate organisational processes, organisations use policies as an instrument to guide and bound these processes. A policy is a guide that establishes parameters for making decisions [Robbins and Coulter, 1996, Robbins et al., 1997]. Policy making is a collaborative process in which attention is devoted to the structure of the policy, to the context and constraints (concerns) of the policy and its creation process, and the actual decisions and events that occur [Sabatier, 1999]. Policy making results to two kinds of policies, governmental/societal and business/organisational policies. The two kinds of policies have distinctive characteristics as shown in table 1.1.

The complexity of policy making processes in an organisation may be described as having to cope with recurring policy problems. Examples of these recurring policy problems in an organisation include information technology innovation and procurement, enterprise security, software development, to mention but a few. These processes may be affected by unclear and contradictory targets set for the policy goals, stakeholders being involved in one or more aspects of the process with potentially different and incompatible values/interests, perceptions of the situation and policy preferences [Nabukenya, 2005]. According to Eden et al. [1983], what makes policy issues often complex is that issues largely result from mental frameworks of e.g. personal beliefs, attitudes, biases, and perceptions, etc. If there are several actors who play a role in a particular policy issue, finding a common definition is a

Table 1.1: Distinctive characteristics of kinds of policies

| Characteristic | Governmental policies | Organisational policies |
|---|---|---|
| Number of stakeholders | Many stakeholders such as interest groups, local public committees, private parties e.g. companies, associations | Fewer stakeholders |
| Type/kind of stakeholders | Variety of stakeholders from various institutions related to the policy type (Multi-actor) e.g. project groups, advising committees, task forces, and steering groups | Stakeholders from within the same organisation, i.e. comprised of the three levels of management |
| Similarity or Difference in interests | Divergent interests and perceptions, power plays, clashes | It is more likely that all stakeholders will be aware of and work towards the interests of the organisation |
| Policy plan designing | Many individuals design the policy plan and follow a top-down authority approach; policy making involves interaction between institutions and organisations | Usually one or two individuals designs the policy plan, and the policy could be initiated at any management level depending on policy problem; policy making involves interaction between individuals of the same organisation |
| Resources used | Variety of resources and various sources | Limited resources and usually from within the organisation itself |

Sources: [Mitroff, 1983, Robbins and Coulter, 1996, Herik, 1998].

rather complicated task. In line with Eden et al. [1983]'s argument is Roelofs [2000] who also observed that the higher the number of parties involved in a policy making process, the more difficult it may become to align the various perceptions of the issue. Koppenjan and Klijn [2004] also describe the policy making process complexity to involve many actors due to the need to mobilise many resources. The complex processes are also characterised with disagreement about the nature of the problem and the desired solutions due to the many actors involved [Koppenjan and Klijn, 2004]. Roelofs [2000] describes complexity in policy processes as the level to which an issue involves substantial and/or highly specialised information that is partly difficult to obtain or judge. Stakeholders involved in the policy making process need information to understand the dynamics of a particular problem and develop options for action [Buuren et al., 2004]. 'Stakeholders' in our context include all those individual actors, groups and institutions that have a bearing on the performance of the organisation as exposed in its policies and actions on the environment. A policy is not made in a vacuum. It is a collaborative task that is affected by social and economic conditions as well as organisational cultural norms, among other variables [Kraft and Furlong, 2004]. The policy outcomes reflect who participates in the process, who does not, and the different resources that each actor brings to the decision-making arena.

Policy making involves three broad collaborative activities: problem definition; solution proposals and a consensus-based selection of the line of action to take. Policy making is frequently done in organisations, i.e. it is a routine collaborative task conducted in organisations in order to address recurring policy problems. However, based on the discussion in the paragraph above, we observe that policy making is affected by complexity. Many approaches such as [Herik, 1998, Bruijn and Heuvelhof, 1999, Klijn and Koppenjan, 2000, Roelofs, 2000, Riet, 2003] have been attempted to deal with this complexity. A discussion of these approaches is provided in chapter 4. In analysing these approaches, we observe that they mainly dealt with the complexity on changing behaviour or building relations (team building) between stakeholders involved in a policy making process. The sequence and logic of policy making process activities that policy stakeholders can use to attain a group goal is missing from these approaches. An approach that can be used to address this challenge is Collaboration Engineering (CE).

Our research thus focuses on examining and addressing the complexity/constraints that are of a collaborative nature and can be met by CE in order to assist organisations to do better policy making. To have an impression of the constraints that are of a collaborative nature, we use the complexity characteristics from the preceding paragraphs. These include but are not limited to setting of unclear and contradictory policy goals, the disagreement about the nature of the policy problem and the desired solutions, the involvement of stakeholders in the process but with different and incompatible interests and policy preferences, and usage of information from different sources and different stakeholders. Using the examples of constraints, and in order to make organisational policy making better, it requires enhancing the collaborative aspects involved in the policy creation process activities. Such collaborative aspects in these process activities among others include knowledge and information exchanging between stakeholders, shared understanding of the policy problem to identify goals and desired solutions, decision-making and consensus building on policy results [Kolfschoten, 2007].

Because of its nature, policy making requires using a variety of resources. Such resources include people/stakeholders e.g. internal, external, hiring domain experts and facilitators, etc, budget/costs from within or external, effort over time, concentration, sharing, gathering relevant knowledge and information, and physical resources, among others. These resources are often used following given and or new processes in order to solve the frequent policy problems. In other words, addressing the recurring policy problems requires organisations to incur new investments. As a result, organisations will require investing highly in order to develop new or modify existing policies. More so, in the traditional settings, there is no one standard process or procedure

of developing these policies. This means that each time a policy is proposed, or one that needs to be modified, organisational stakeholders will have to invest in new resources and also follow new processes in order to solve the recurring policy problem. Thus far, to assist organisations in reducing on high investments incurred, we choose to address the constraints that are of a collaborative nature in policy creation processes. Addressing these concerns will also help organisations gain value out of their investment.

Based on the discussion above and given the fact that policy making is a routine collaborative task that deals with addressing recurring policy problems, organisations and their stakeholders may need to have quality collaborative policy making processes (CPMPs) that can enable them to solve these recurring policy problems more effectively and efficiently. The quality CPMP can be achieved by support of a quality process design, i.e. a well-defined process specification design with several choices depending on the context/situation in which a policy needs to be specified that is referred to when making policies.

Using Briggs et al. [2006b], we define a ***policy making collaboration process design*** as a process prescription (noun) that defines the sequence and logic of policy making process activities that are used to attain a given set of policy process goals depending on the context/situation, and the conditions under which these activities will be executed. This means that the process prescription in this research only provides process activities for the policy making process that can be executed by policy stakeholders in order to produce an acceptable policy result. For instance depending on the context or situation in which a specific policy needs to be formulated, the process may focus on negotiation, decision making, or policy content. For example, stakeholders may require negotiating goals and objectives for a specific policy. Another example is that goals and objectives may be in place, but stakeholders need to develop content for policy elements and their implications. This process design/prescription should enable organisational stakeholders to execute specific process activities depending on what is required in order to enable stakeholders attain specific goals. Thus, this process design/prescription takes care of a pre-used policy, i.e. it does not take care of other policy cycle phases such as problem definition, policy implementation, policy evaluation and policy change.

To design a quality collaborative policy process design, we apply the practice of Collaboration Engineering (CE) to the field of organisational policy making. The definition of CE is provided in later sections of this chapter. Note that the CE approach is a process building approach. It therefore needs a theoretical basis to guide the process design. In other words, to improve collaborative policy making processes, we need to understand the

design choices that should be considered to design a quality process design. Understanding of the design choices requires first to understand what makes good policies from a collaborative policy making effort. A quality collaborative policy making process design can be used to improve the collaborative policy making processes and the resulting policies. The quality of this collaboration has a profound impact on the quality of the resulting policies and the acceptance by its stakeholders. In the proceeding sections, we describe and discuss policies and policy making processes with an aim of identifying their characteristics. These characteristics should positively provide us with a background to an understanding of what makes good policies in a collaborative policy making effort.

In this chapter therefore, we first discuss organisational policies, policy making processes, then we introduce the need for Collaboration Engineering as an approach that can support improving organisational policy making. Specifically, in Section 1.2 we discuss the concept of policy in terms of its characteristics and purpose. Section 1.3 describes the policy making process. In Section 1.4, we discuss information technology as a potential tool for policy making processes. In Section 1.5, we introduce the need for CE in organisational policy making processes. This leads to the research problem statement, and finally the research questions and research objectives that guide the research in Section 1.6. The discussion in this chapter is mainly based on [Nabukenya, 2005].

## 1.2 What is policy?

With an increase in internal and external business needs, organisations have continuously established organisational policies. This means, in order to regulate their processes, organisations use policies as an instrument to guide and bound these processes.

### 1.2.1 Definition and characteristics

The concept of ***policy*** and its characteristics has been defined by several researchers in different fields such as business and government. For example, in the field of business, Hall [1984] defines a policy as an "important decision resulting from group processes within the organisation and not imposed from above". Robbins and Coulter [1996], Robbins, Bergman, and Stagg [1997] define a policy as a "guide that establishes parameters for making decisions". It provides guidelines to channel a manager's thinking in a specific direction.

In the field of government, a policy is a deliberate plan of action to guide

decisions and achieve rational outcome(s) [Wiki, 2008]. According to Jenkins [1978], a policy is "a set of interrelated decisions taken by a political actor or group of actors concerning the selection of goals and the means of achieving them within a specified situation where those decisions should, in principle, be within the power of those actors to achieve". Jenkins' definition is identified with policy making to be a process, and not simply a choice. Rose [1969], considers policy as "a long series of more-or-less related activities and their consequences for those concerned rather than as a discrete decision". Rose's definition embodies the useful notion that policy is a course or pattern of activity and not simply a decision to do something. Friedrich [1963] regards policy as "a proposed course of action of a person, group, or government within a given environment providing obstacles and opportunities which the policy was proposed to utilize and overcome in an effort to reach a goal or realise an objective or a purpose". To the notion of policy as a course of action, Friedrich adds the requirement that policy is directed toward the accomplishment of some purpose or goal. Although the purpose or goal of government actions may not always be easy to discern, the idea that policy involves purposive behaviour seems a necessary part of a policy definition. Policy, however, should designate what is actually done rather than what is proposed in the way of action on some matter.

Anderson [2003] defines policy as "a purposive course of action followed by an actor or set of actors in dealing with a problem or matter of concern". Anderson's concept of policy focuses attention on what is actually done as against what is proposed or intended. His definition also differentiates a *policy* from a *decision*, which is a *choice among competing alternatives*. Eulau and Prewitt [1973] do define a policy as a "standing decision characterised by behavioural consistency and repetitiveness on the part of both those who make it and those who abide by it". Whether in the public or private sector, policies also can be thought of as the instruments through which societies regulate themselves and attempt to channel human behaviour in acceptable directions [Schneider and Ingram, 1997]. In other words, policies can be understood as management, political, and administrative mechanisms set to achieve explicit goals.

The concept of policy is not limited to the world of business and government alone. In the field of Information Technology (IT), several forms of policies exist as well. For example, Keen [1981] discusses the notion of IT policies to govern and direct an organisation's IT portfolio, while Davenport, Hammer, and Metsisto [1989] and Tapscott and Caston [1993] have used the term *architecture principle* to refer to the same notion. Another form of policy playing an increasingly important role in the field of IT are business rules as a mechanism to formalise business policies [Ross, 2003].

On analysing the above policy definitions, we observe that a policy is characterised as a purposive action and not a rule. We observe that this purposive action (policy) involves a set of actors and not one; and that these actors aim at realising goals. We also observe that a policy/purposive action is a process prescription, i.e. is a set of related activities that can enable reaching a goal. In addition, we analyse that a policy relates to decisions and it aims at realising goals. More so, we analyse that a policy deals with behaviour; and it governs and directs any given portfolio of an organisation. Broadly, we analyse that explicit policies are a key indicator for successful organisational decision-making. Taking into account the various perspectives of policy, we offer the following definition to help integrate them: *a policy is a purposive course of action followed by a set of actor(s) to guide and determine present and future decisions, with an aim of realising goals* [Nabukenya, 2005].

Our definition emphasises the purposive course of action (the related activities/process prescription) that can direct realisation of goals. Improving this course of action in order to realise goals is the major focus of this research. To better understand the aim of this research, we need to understand the policy making processes. But first let us examine why organisations create policies.

### 1.2.2 Policy purposes

Reasons for creation of policies among others include [DECS, 2008, Wiki, 2008, Ford and Spellacy, 2005, Anderson, 2003, Schneider and Ingram, 1997]:

1. improving decision making;
2. managing risks and entitlements;
3. explaining reasons for change – when organisations and government need to communicate their intentions, or even explain their actions, they effect this by use of developed, documented and communicated policies;
4. help in focusing on what is important – organisational implementation of change and dealing with new challenges can be illustrated with policies;
5. guiding actions and informing judgments – suitable judgments, problem-solving and strategic planning by organisational decision-makers can be made by policy guidelines;

6. reinforcing relationships and capacity building – people, organisations, and government are able to switch ideas and information through engaging in policy activities.

In brief, policies establish responsibilities and accountability, help to ensure compliance and to reduce institutional risk, establish and/or defend a legal basis for action, and to provide clarification and guidance to the organisational community [Ford and Spellacy, 2005].

## 1.3 Policy making processes (PMPs)

Policies are created in a policy making process (PMP), which presents an iterative and collaborative task. Several definitions of policy making processes have been suggested in literature [Jones, 1970, Brewer and Leon, 1983, Jones, 1984, Anderson, 2003, Kraft and Furlong, 2004]. However, we use a few definitions that are related to the focus of this research. The focus of this research is to improve organisational policy making and policies being made in these processes.

### 1.3.1 Definition and characteristics

According to Sabatier [1999], the process of ***policy making*** "includes the manner in which problems get conceptualised and brought to the governing body for solution; these formulate alternatives and select policy solutions; and those solutions get implemented, evaluated, and revised". In other words, the policy making process connotes temporarily, an unfolding of actions, events, and decisions that may culminate in an authoritative decision, which, at least temporarily, binds all within the jurisdiction of the governing body. In explaining the policy making process, Sabatier's emphasis is much more on the unfolding than it is on the authoritative decision. In examining the unfolding, attention is devoted to the structure, to the context and constraints of the process, and to actual decisions and events that occur.

Mintzberg et al. [1976] define policy making as "a process of defining and treating ill-structured issues and problems". In relation to Mintzberg et al. [1976], Mitroff [1983] also describes policy making as "a process of forming, weighing, and evaluating numerous premises in a complex, continually changing and unfolding argument". The premises in these arguments are in effect the assumptions that are made with regard to the stakeholders that are judged to be relevant to the policy issue under consideration. Mintzberg et al. [1976], Mitroff [1983] and Sabatier [1999] do have the same line of thought about policy making processes.

Dunn [1981] defines policy making as "the administrative, organisational and political activities and attitudes that shape the transformation of policy inputs into outputs and impacts". The definitions given above so far stress the fact that, there is no one single process by which policy is made. Variations in the subject of policy will produce variations in the manner of policy making. For example, foreign policy, taxation, railroad regulation, and professional licensing, among others, are each characterised by distinguishable policy processes [Anderson, 2003]. In line with this argument, Dunn [2004] extends his description of policy making in [Dunn, 1981] to include a social process where the structure, scope and intensity of interaction among stakeholders govern the creation and use of information. This means that several factors determine the structure, scope and intensity of interaction.

In analysing these definitions, we observe that the PMP is characterised as an iterative and collaborative process involving interaction amongst three broad streams of activities: problem definition, solution proposals and consensus-based selection of the line of action to take. We also observe the PMP to follow authority top-down approaches to solve policy problems. We observe that the core actors/stakeholders of a policy making process must be involved in complex and key decision-making processes themselves, if they are to be effective in the policy making process. This means that the key actors/stakeholders contribute to the policy goal, i.e. their contributions should make the policy itself to achieve their goal. Furthermore, we observe that the actors involved in the policy making process need to have information to understand the dynamics of a particular problem and develop options for action. Lastly, we observe that policy making is a result-focused process i.e. it aims at solving policy problems, that requires understanding of the policy problems by the actors involved in order to solve this problem.

### 1.3.2 Policy making process cycle

Sometimes the phrase *policy cycle* is used to make clear that the process is cyclical or continuous rather than a one-time set of actions Dunn [1981]. Instead of a top-down listing of each stage, it could be presented as a series of stages linked in a circle because no policy decision or solution is ever final. Changing conditions, new information, formal evaluations, and shifting opinions often stimulate reconsideration and revision of established policies. In the real world these stages can and do overlap or are sometimes skipped. In other words, policies might be formulated before they are high on the organisational agenda, or it may be impossible to differentiate policy formulation from policy adoption. At times, policy evaluations begin before the policies are fully implemented [Kraft and Furlong, 2004].

Despite these complications, the policy process cycle captures important aspects of policy making in a sequential pattern of action involving a number of functional categories of activity that can be analytically distinguished as seen in table 1.2.

Table 1.2: The Policy Process Cycle

| **Stage of the Process** | **What it means** |
|---|---|
| Agenda setting (Problem formation) | How problems are perceived and defined, command attention, and get onto the political agenda. (What is a policy problem? What makes it a public problem? How does it get on the agenda of the government?) |
| Policy formulation | The design and drafting of policy goals and strategies for achieving them. Often involves the use of policy analysis. (How are alternatives for dealing with the problem developed? Who participates in policy formulation?) |
| Policy legitimation (Adoption) | The mobilization of political support and formal enactment of policies. Includes justification of rationales for the policy action. (How is a policy alternative adopted or enacted? What requirements must be met? Who adopts policy?) |
| Policy implementation | Provision of institutional resources for putting the programs into effect within a bureaucracy. (What is done, if anything, to carry a policy into effect? What impact does this have on policy content?) |
| Policy and program evaluation | Measurement and assessment of policy and program effects, including success or failure. (How is the effectiveness or impact of a policy measured? Who evaluates policy? What are the consequences of policy evaluation?) |
| Policy change | Modification of policy goals and means in light of new information or shifting political environment. (Are there demands for change or repeal?) |

Sources: [Kraft and Furlong, 2004]; primarily from[Jones, 1984, Brewer and Leon, 1983, Lasswell, 1950].

We use this table to derive a basic domain model of policy making process design, with specific attention to the policy formulation phase only, as visualised in Figure 1.1. It is this model that we focus on for improvement using the Collaboration Engineering approach. In other words, we are interested in addressing the collaborative concerns in this process. Addressing these concerns will improve the quality of policy formulation processes (collaborative task execution) and policies being decided on.

To sum up, policy development involves identifying and analysing a range of actions to respond to given concerns. Nevertheless, policy development does not follow a clear and consistent pathway. It is a complex process which regularly takes place in an unsteady and rapidly changing environment, subject to erratic internal and external dynamics. Some researchers have used Information Technology (IT) to respond and support the complexity in policy making processes. In the section that follows, we examine some of these technologies.

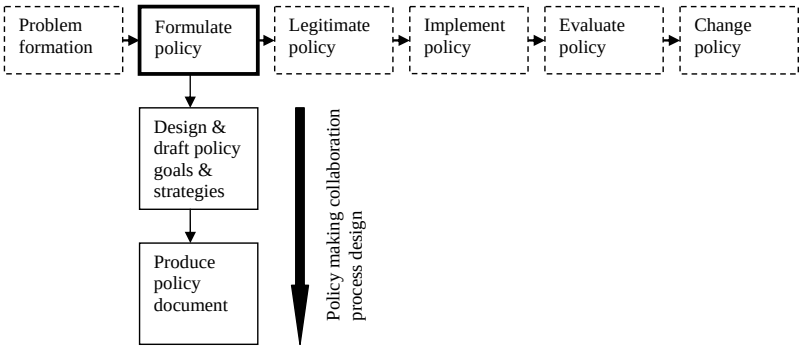



Figure 1.1: Basic PMP Domain Model: Policy formulation phase

## 1.4 Information Technology (IT) for PMPs

The application of IT has expanded from single users to supporting groups of people in organisations, involving such tasks as communication, coordination, sharing of data and shared decision making. Various researchers for example [Coleman, 1994, Ellis et al., 1991, Johansen, 1988] have labelled these types of IT as groupware, to indicate information technologies that mediate electronic interpersonal collaboration. Examples of different group ware applications can for example be seen in [Vreede, 1995].

Among the groupware technologies are Group Support Systems (GSS). GSS are said to enhance productivity and create organisational value, once work groups use them under the right conditions. For a comprehensive overview of GSS research, see for example [Fjermestad and Hiltz, 2001, 1999, Nunamaker et al., 1997]. Research shows that GSS have been applied to support PMPs. We highlight a few examples of these researches. Herik [1998] employed GSS to support policy making. In his research, a description of GSS and how they can be used in several ways to provide policy group meeting needs is discussed. Herik's approach was to prepare and execute policy meetings supported by a GSS. His research takes into account the rational and social interaction characteristics of policy processes. In Herik's approach, the strengths of GSS policy meetings are the increase in participation, idea generation, time efficiency, and goal directness. These add up to an opportunity to actively consult large, mixed, groups of people.

Herik and Vreede [2000] used GSS to support policy making processes. These researchers observed that the process of idea generation, visual modelling, and the facility to provide anonymity appear to be highly successful in a multi party policy environment. In line with Herik and Vreede [2000], Herik [1998], is Vreede and Bruijn [1999] who applied GSS in inter-organisational

policy making network environments. They found out that GSS are more effective in creativity tasks than for preference tasks and mixed motive tasks in such an environment.

Another example on GSS application to support policy making is the research by Bongers et al. [2000], Batenburg and Bongers [2001]. Bongers et al. [2000] performed a field experiment using the GSS in a participatory policy debate. The policy debate involved citizens of a certain country and they debated on the future of their city. The purpose of their experiment was to test whether the use of a GSS had a positive effect on the quality of the group processes and the quality of group results. Bongers et al. [2000] found out that process facilitation and time effects had more influence on group processes and outcomes than did the use of a GSS. In addition, they found out that participation in policy making processes proved to be very difficult without the use of GSS.

Also Batenburg and Bongers [2001] used the GSS as a participatory instrument in policy analysis. They found out that GSS is an effective tool to support the quality of participatory policy analysis in technology policy making. For a complete discussion on GSS benefits and support for policy making see for example [Vennix, 1990, Herik, 1998, Vreede and Bruijn, 1999, Herik and Vreede, 2000, Bongers et al., 2000, Batenburg and Bongers, 2001].

Using the above examples on GSS support for policy making, and based on the strengths the researchers display about the GSS in policy meetings, we acknowledge that IT can support and change the way policies are developed, selected, and implemented. However, we argue that using technologies alone does not provide effective and efficient collaboration towards goal achievement. Our argument is based on some of the observations made by Herik [1998] and Herik and Vreede [2000] about GSS negative impact on policy processes. Herik [1998] observed that GSS provided efficient ways of working; however, the quality of ideas produced, in the perception of the participating policy makers was reduced. More so, consensus and commitment cannot be increased through extensive use of electronic brainstorming sessions, electronic discussion and certainly not through electronic facilitated voting.

In line with Herik [1998]'s observation, Herik and Vreede [2000] also observed that opinions, ideas and views in policy processes need time to be discussed and to sink in. In other words, GSS are not suitable for in-depth policy debate on complex issues in policy making. The output and efficiency driven approach of group supported sessions should be balanced with verbal and in-depth discussion [Herik and Vreede, 2000].

Thus far, to enable achieving group goals from group processes, policy making stakeholders need much more support than just technology alone. These stakeholders need to be advised on how collaboration support for

group processes in addition to technology can enable them to work towards achieving a group goal. To this end, we propose the Collaboration Engineering approach as a technique that can provide support in the quality of collaboration for a recurring mission critical task to achieve a goal. In this case, we need to understand and examine what we mean by Collaboration Engineering.

## 1.5 What is Collaboration Engineering?

Organisational policy making is a complex ill-structured and messy problem-solving process, as no single person has all the understanding, information and resources to do it alone [Mintzberg et al., 1976]. This means, policy making stakeholders have to collaborate in order to produce an acceptable policy result. In the introduction of this chapter, we discuss when and how policy making is collaborative. Collaboration is defined by Vreede and Briggs [2005] as *joint effort towards a group goal*. Locke and Latham [1990] describe a *goal* as a desired state or outcome. In other words, stakeholders' collaborative efforts should be joint, rather than individual. To this end, when collaborative efforts are joint, then they must be directed towards a group goal [Briggs et al., 2006b]. However, not always does joint effort lead to successful collaboration or quality results [Kolfschoten, 2007].

Organisations struggle to make collaboration work. Achieving effective team collaboration still remains a challenge [Vreede and Briggs, 2005]. Because of this challenge, organisations have resorted to using groupware technologies in order for collaboration to work for them. However, technology alone seldom results in effective and efficient collaboration. That is, effective and efficient collaboration can support groups in their joint efforts towards achieving a group goal [Fjermestad and Hiltz, 2001]. Collaborative technologies produce the best results when they are supported by processes that have been designed to make good use of the capabilities of those technologies [Dean et al., 2000]. This challenge is said to be overcome by use of collaboration support [Kolfschoten, 2007].

The support of collaboration can be in various ways from tools, processes, and services [Kolfschoten, 2007] to many others. Collaboration Engineering (CE) is an approach that can provide support in the quality of collaboration for a recurring mission critical task (in our case collaborative policy making task) in the organisation [Kolfschoten, 2007]. While we briefly introduce the concept of CE in this chapter, we further provide a more broad definition and detailed discussion of this concept in chapter 3. Vreede and Briggs [2005] and Briggs et al. [2006b] define ***Collaboration Engineering*** **(CE)** as *an*

*approach to designing collaborative work practices for high-value recurring tasks, and deploying those designs for practitioners to execute for themselves without ongoing support from professional facilitators.*

Collaboration Engineering therefore, is an approach to address recurring collaboration processes that can be transferred to groups that can be self-sustaining in these processes using collaboration techniques and technology [Vreede, 2004]. Examples of recurring collaboration processes that have succeeded in various sectors such as in financial services, defense and software development can be seen in [Appelman and Driel, 2005, Vreede et al., 2005, Graaff, 2004, Harder and Higley, 2004, Boehm et al., 2001]. An additional example of a validated collaboration process, though one that has not been deployed to organisations can be seen in [Kamal et al., 2007]. These and other efforts in the field have demonstrated the potential of the CE approach in various sectors and organisations. A broad discussion on the CE approach and its benefits is provided in chapters 3 and 4.

Notwithstanding the great potential of CE in organisational work-practice, its applicability and knowledge, as well as experiences of collaborative effort to support organisational policy making, has not been explored. Our research therefore focuses on strategies that help determine and improve the quality of collaborative policy making processes and the policies being decided on using a quality policy creation process design.

## 1.6 Research questions and objectives

In essence, a policy making process is a collaborative process where attention is devoted to the structure of the policy, to the context and constraints (concerns) of the policy and its creation process, and the actual decisions and events that occur [Sabatier, 1999]. Our research aims to examine and address the concerns that have a collaborative nature and can be met by CE. A discussion of some these concerns has been given in the earlier sections of this chapter. A comprehensive discussion on these collaborative concerns in policy making processes is provided in chapter 4.

Although the policy making process is characterised by complexity, a policy can only be realised on the basis of collaboration in which the actors involved contribute the resources needed. However, the analysis to realise an acceptable policy result (good policy) from a collaborative policy making process (PMP) effort poses interesting challenges: ***what does it mean for a policy to be good in a collaborative PMP effort? More so, there is no underlying theory in policy analysis explaining what a good policy and collaborative policy making process design are.***

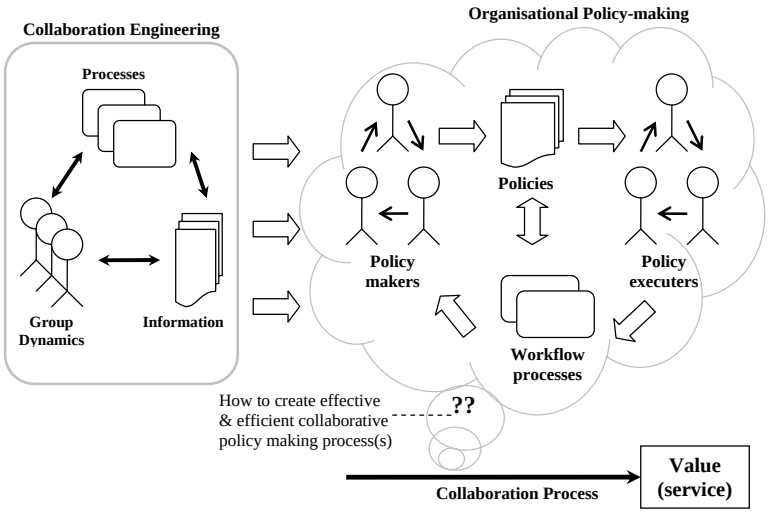



Figure 1.2: Collaboration Engineering for Organisational Policy Making

Figure 1.2 depicts an organisation with a challenge of how organisational stakeholders via the right-hand side of the figure can create quality collaborative PMPS that occur often in related fashions to realise acceptable policy results (good policies). To address this challenge, we introduce the Collaboration Engineering (CE) approach shown in the left-hand side of the figure. The intention of the collaboration process is to visualise the collaborative policy creation process design. This process, if executed successfully, should enable organisations and their stakeholders to derive added value as shown at the bottom of Figure 1.2. We explain what we mean by added value in chapter 3. To better understand how the CE approach can address our research problem, we are guided by the following **research questions**:

1. (a) What are the concerns that are of a collaborative nature in a policy making process?
   (b) What makes a good policy from a collaborative PMP effort?
2. (a) What design choices and assumptions/requirements of Collaboration Engineering might follow from organisational policy making to derive a quality collaborative PMP design?
   (b) How might Collaboration Engineering aid in supporting to improve these requirements i.e. quality of the collaborative PMPs and the resulting policies?

To answer our research questions, we pursue the following **research objective**: to develop a design theory to guide the design of quality collabo-

rative organisational policy making processes and the resulting policies from these processes, i.e. the design theory should provide:

1. The quality dimensions for a good policy from a collaborative policy making effort and methods for assessing these dimensions;
2. The design choices and assumptions/requirements, in which the process design needs to be designed, executed and evaluated, i.e. strategies and techniques for achieving quality performance, and methods for assessing quality outcomes of the process design/prescription;
3. The design object, i.e. a collaborative policy making process prescription.

## 1.7 Conclusion and research contributions

In this chapter, we have seen that policy making involves several stakeholders with divergent interests. Each stakeholder may have some limited resources. When resources and decision-making are spread across stakeholders, the stakeholders become dependent upon each other to realise an acceptable policy. This research therefore aims at offering a theory to guide the design of quality collaborative organisational policy making processes and the policies being decided on in these processes. The collaboration process design method to be used and evaluated is Collaboration Engineering (CE). As such we will first describe what the CE approach is and its benefits. Then we will inductively derive collaborative needs for organisational policy making processes, and the factors that describe a good policy from a policy making effort. Next, we will use these factors to build a theory on good policy. The resulting theory will then be used to provide a theoretical basis for the designing of a collaborative policy making process design. In other words, we will use the theory to obtain a set of metrics to determine the quality of the collaborative policy making process design. Finally, the process design will then be tested to evaluate if it provides for a quality organisational collaborative policy making process and resulting policies.

In conclusion, the research will help to provide a design theory to guide the design of quality collaborative organisational policy making processes and the resulting policies. Thus, the implications of our research will be to:

- Get more understanding of the collaborative needs (process requirements) that a collaboration engineer requires in order to design a quality collaborative policy making process that can be referred to when making policies.

- Derive a theory on good policies that offers useful metrics that can be used by organisations and their stakeholders to define high quality policies from their collaborative policy meeting efforts.
- Use the theory above to derive design choices that can be used by a collaboration engineer to design a quality collaborative policy making process design. The design choices can be used as evaluation metrics that can enable organisations and their stakeholders to assess a quality collaborative policy making process that they can use to realise quality policies.
- Use the above insights to create a quality collaborative policy making process design that organisations and their stakeholders can use as a process to develop policies that address their recurring policy problems.

In the chapter that follows, we elaborate on the research approach that we use to guide us in answering the research questions, to develop the theory, and to evaluate the process design method.

# Chapter 2

# Research Approach

Collaboration Engineering (CE) is a new and growing field of research and practice [Vreede and Briggs, 2005, Briggs et al., 2003]. The result of engineering in CE is a design object of a collaboration process and collaboration support, including rules and capabilities that should support groups in instituting this process [Vreede and Briggs, 2005]. The CE foundations are positioned in various research domains. Specifically, CE was established from collaboration support approaches such as: Group (Decision) Support Systems [Fjermestad and Hiltz, 2001, 1999, Nunamaker et al., 1997]; Computer Supported Cooperative Work [Ellis et al., 1991]; and facilitation [Griffith et al., 1998]. We use some of this collaboration support literature to derive CE theoretical foundations and elementary constructs. The CE theoretical foundations are what we use to develop the design object and collaboration support found in this research.

In addition to collaboration, CE also has links with various engineering approaches. These engineering approaches can be used as a blueprint for CE approach and the design approach within CE [Kolfschoten, 2007]. Based on Kolfschoten [2007], the engineering approaches among others include software engineering [Boehm, 1988, Gamma et al., 1995], systems engineering [Jackson, 1983, Checkland, 1981], and Business Process Engineering [Grover, 1999, Kettinger and Teng, 1997]. To develop our collaborative policy making process design, we use the thinkLet. The sources of literature we use for the thinkLet concept among others include [Vreede et al., 2006, Briggs et al., 2003]. We define and further discuss this concept in chapter 3.

For the CE approach to be effective to organisational policy making, it must be relevant to organisational policy making collaborative needs and practice. Thus the outcomes of interest in collaborative policy making process effort are analysed in the context of policy process collaboration support. To explain our outcomes of interest study, we use different theories in exist-

ing literature such as the focus theory [Briggs, 1994] assists us to explain the focusing of resources towards goal achievement, and goal achievement [Locke and Latham, 1990, Veld, 1987] assists us to explain about the effectiveness dimension, among others.

To conduct the use and measure the effectiveness of the CE approach to organisational policy making therefore, we need to use a research approach. A research approach involves following a given research strategy. This includes a combination of one of more research instruments used for data collection and analysis on the phenomenon being studied. The phenomenon we are studying in this research is about what makes good policies. In this chapter therefore, we first describe the research strategy and research instruments we use to address our research questions and pursue our objectives. We then conclude by describing the research outline of this thesis. We base on the discussion in [Nabukenya et al., 2006] to describe the research instruments used in this research.

## 2.1 Research strategy

To better understand a phenomenon of interest under investigation, a research strategy is fundamental in any research. A *research strategy* is described as a series of steps performed to accomplish an inquiry into the phenomenon being investigated. Churchman [1971] differentiates five fundamental modes of inquiry (research strategies); though their roots lie in the philosophies of Leibnitz, Locke, Kant, Hegel and Singer. The inquiry systems include: *Leibnitzian* – discovering of truth about the world through formal deduction; *Lockean* – the truth is found in the external world. That is, a combination of experiences from the community explains the world; *Kantian* – is a combination of both Leibnitzian and Lockean. That is, truth is uncovered through formal deduction and combinations of experiences from the community; *Hegelian* – the truth materialises from conflicting views. That is, conflicting issues are resolved by merging arguments to generate a synthesis; and *Singerian* – the multiple truth(s) are discovered via endlessly, inductively, and multiple sources of data as well as multiple view points. That is the truth(s) created is/are comparative to the inquiry context and its objectives. For a complete overview of characteristics for each of these inquiry systems, we refer to [Churchman, 1971].

In deciding what inquiry system (research strategy) to use in any given research, the nature of the research problem and the theory development status need to be determined. The Singerian inquiry system is assumed to be handy for ill-structured problems [Richardson and Courtney, 2004]. In

our research, the nature of the problem under investigation is characterised as an ill-structured problem. That is, we are dealing with improving policy making processes and policies being decided on. Policy making by nature is characterised as an ill-structured process where objectives and methods to arrive at these objectives are not clear. Besides, there is no underlying theory in policy analysis explaining what a good policy is. To this end, we adapt the Singerian inquiry system/research strategy to inductively discover the quality dimensions necessary for realising good policies and develop our theory consequently.

The goal of the Singerian inquiry system (research strategy) is to check progress (improvement). This progress (improvement) needs to be measured using multiple perspectives. Quantitative measures can be used at any time feasible. The qualitative measures are assured by the group's perceptions that improvement is being done [Richardson et al., 2001]. In this research, the improvement to be made is the quality of collaborative policy making process(s) and policies being made. This improvement is measured in the definition of what we describe as a quality collaborative policy making process design. In other words, we assume that with a quality collaborative policy making process design, there is improvement in the quality of the collaborative policy making processes and the resulting policies. To measure this improvement therefore, we use the Singerian inquiry system prescription of diverse multiple perspectives. We do this by using diverse measurement instruments to measure outcomes from diverse perceptions.

To fufil what we have described in the paragraphs above, we suggest applying an inductive-hypothetic approach based on Churchman [1971]'s Singerian inquiry system. This approach has also been successfully used in methodologies of some researchers [Herik, 1998, Vreede, 1995, Sol, 1982] to solve ill-structured kinds of problems.

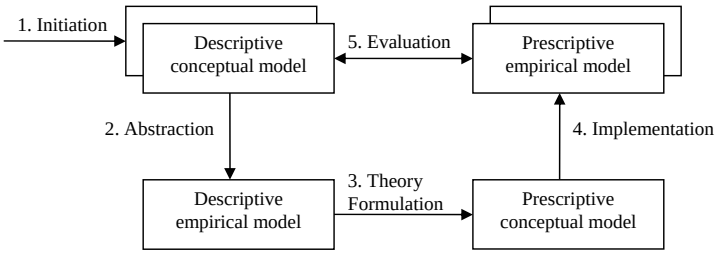



Figure 2.1: The Inductive-Hypothetic Research Strategy

In this research, the inductive-hypothetic research strategy shown in Figure 2.1 starts with reviewing of literature on policy making science via arrow-

label 1. The outcome is a descriptive conceptual model providing a first analysis of the challenges/concerns for policy making processes and the parameters that are needed to arrive at acceptable policies from these processes. To substantiate the first analysis, we perform field explorative studies on the key challenges, characteristics and qualities of policies and policy making processes via arrow-label 2. The outcome is a descriptive empirical model providing a description on the collaborative needs for policy making processes and the quality dimensions for good policies and policy making processes. Using the analysis from the two sources, i.e. conceptual and empirical descriptions, we build the theory that should be competent to solve the research problem, via arrow-label 3. The theory developed is referred to as the prescriptive conceptual model. This theory describes an understanding of what makes a good policy. The analysis from this theory is then used to determine quality dimensions for a quality collaborative policy making process design. In others words, we use the theory to understand the design choices to consider in designing a quality collaborative policy making process (CPMP) design. This means that part of the theory requires designing of a quality CPMP process design. The prescriptive conceptual model needs to be tested and validated; therefore we implement it in four prescriptive empirical environments, via arrow-label 4. Finally, the prescriptive empirical model results are evaluated to create and make improvements.

Note that the research strategy described above does not put forward a procedure of how to conduct individual steps. Thus far, it is necessary to include research instruments that can be used to conduct these individual steps. We visualise this relationship in Figure 2.2 (see section 2.2.4). Following is a description of the research instruments used in this research.

## 2.2 Research instruments

Research instruments are used to guide researchers in defining, collecting, organising, and interpreting their data. For instance, experimental research is an instrument in which a researcher manipulates a variable under highly controlled conditions to see if this produces (causes) any changes in a dependent variable. While, survey research is one where a researcher makes inferences about behaviour from data collected via interviews or questionnaires. Also a researcher may use a case study for some detailed investigation of a particular phenomenon of interest.

There are various research instruments (see [Nabukenya et al., 2006]) that can be used in conducting research on the CE approach to support organisational collaborative policy making. In table 2.1, we provide a summary

of the most generally used instruments based on Nabukenya et al. [2006]. In this table, we also show how the instruments apply to the CE approach to ascertain their effectiveness to support organisational collaborative policy making (CPMP). In the same table we also illustrate how these research instruments supplement each other towards fufilling a comprehensive CE study. For a comprehensive description of each of these instruments such as their characteristics, strengths and weaknesses, we refer to [Pare, 2004, Yin, 2003, Benbasat et al., 1987, Baskerville, 1999, Eden and Huxham, 1996, Strauss and Corbin, 1990, Glaser and Strauss, 1967, Pinsonneault and Kraemer, 1993, Hevner et al., 2004, Orlikowski and Iacono, 2001, March and Smith, 1995].

From this table, we choose to use the *case study research* and *action research* instruments for this research. In addition to these two, we also use the *design science* research instrument since part of this research requires the development of design support and design object. We argue that case study research and action research instruments are most appropriate in our research context based on the following strengths:

1. Case study research permits in-depth descriptions, explanations and explorations of phenomena in natural settings. That is, a case study is useful when a holistic, in-depth investigation is needed. A case study is also useful when a phenomenon cannot be studied outside the context in which it occurs [Benbasat et al., 1987, Yin, 2003, Pare, 2004]. This also applies to action research [Eden and Huxham, 1996]. In other words, both research instruments permit the involvement of the researchers with members of case organisations in the problem setting. To study the phenomenon under investigation, that is, CE support for organisational policy making, we need to first explore what organisational policy stakeholders understand by good policies and policy making processes. To achieve this, we need to visit case organisations to study their policy making environments. The study includes aspects such as: characteristics; qualities of policies and policy making process, resources used; and challenges faced, among others.

2. Action research permits us to continuously design, evaluate and improve the CE approach in a natural setting [Hult and Lennung, 1980]. That is, the theory is designed and implemented in a series of interventions in which evaluations are performed to make improvements.

3. The case study research and action research instruments focus on process, that is, *'how'* and *'why'* research questions [Pare, 2004, Yin, 2003, Baskerville, 1999]. Our research deals with improving collaborative organisational policy making processes and policies being made. To

Table 2.1: Summary Table of Research Instruments

| **Research Instrument** | **Relevancy to Collaboration Engineering** | **Example(s) of policy making process issues** | **Supplement Research Instrument** |
|---|---|---|---|
| Case Study Research (CSR) | i) Provides detailed contextual views on phenomenon of interest | Improving "quality" of organisational policy processes; e.g. we would need descriptions on PMP: i) characteristics, ii) deliverables, iii) challenges | i) Grounded theory - to build/develop theory from descriptions of phenomena ii) Survey research method - to test, for example, constructs defined; and theories developed using CSR ii) Action research - theory application and evaluation concurrently (theory testing) from CSR |
| Action Research (AR) | i) Addresses the "how to" research questions ii) Continuous design and evaluation in un-constructed settings iii) Evaluation and improvement of problem-solving techniques or theories during a series of interventions | i) How to test, measure, and evaluate a collaborative organisational policymaking process/theory? ii) How might CE aid in supporting to improve the quality of the collaborative PMP effort? | i) Grounded theory - to organize data i.e. coding methods can be used to enrich the theoretical underpinnings of an AR case study. ii) Case study research - to provide descriptions of phenomena in an AR iii) Survey research - to produce quantitative descriptions on phenomena in an AR iv) Experimental Research - to test interventions in AR v) Design Science Research - to construct knowledge and artefacts for validation in AR |
| Grounded Theory Research (GT) | i) Development of a theory that can be used to account for variations in the outcome of interest | Improving "satisfaction" with group processes and product among stakeholders who are developing an organisational policy; e.g. causes of policy stakeholders to feel satisfied | i) Case study Research - to provide description of phenomena ii) Action Research - to test and validate theory built in GT |
| Survey Research (SR) | i) Measurement of the success of collaboration process outcomes and process designs seeks uniformity from the participants in an intervention | i) What is policy-makers' stake on collaborative organisational policy making? ii) What do stakeholders want to see in a supported collaborative organisational policy -making process that is different from the traditional one? | i) Case study research - to be used together with SR develops a richer, more detailed, and complete understanding of how and why certain results occur in SR ii) Application of Naturalistic observation - to systematically watch and record naturally occurring behaviour |
| Design Science Research (DSR) | i) To construct knowledge and artefacts for collaboration processes designs | i) How to develop and design thinklets that are suitable for transferability of CPMP design to policy practitioners/stakeholders? | i) Action Research, Survey Research and Experimental Research - to test, validate and evaluate knowledge and artefacts constructed in DSR |

address this, we use research questions related to how policy making is done in real-life scenarios; and how the CE approach can support improving organisational PMPs and the resulting policies.

We also choose to use the *design science* research instrument because of two main reasons. First, it focuses on the creation of artefacts aimed at achieving purposeful goals and improving human and organisational processes. Second, design science seeks to understand and improve both the artefacts themselves and the processes by which they are created [March and Smith, 1995]. Our research aims at improving collaborative organisational policy making processes and the policies made in these processes. In order to achieve this, we use a design process approach (Collaboration Engineering) to construct knowledge and artefacts for the design object i.e. the collaborative policy making process prescription that we use to improve collaborative organisational policy making processes. We therefore use design science to address some of our research questions.

Nevertheless, the case study, action research, and design research instruments do have some weaknesses. Following is a brief description of each of their characteristics, weaknesses and how these are addressed for this research to be effective, and how we apply the research instruments in this research.

### 2.2.1 Case study research instrument (CSR)

Case study research (CSR) is defined by Yin [2003], as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident". When using predefined research questions, case study research can also be distinguished as qualitative and observatory [Yin, 2003]. Case study is said to be useful when a phenomenon is broad and complex, where the existing body of knowledge is insufficient to permit the posing of causal questions, when a holistic, in-depth investigation is needed, and when a phenomenon cannot be studied outside the context in which it occurs [Pare, 2004, Yin, 2003, Benbasat et al., 1987].

CSR also has some limitations. First, it is difficult to design and scope a CSR project in order to ensure that the research question(s) can be appropriately and adequately answered. Secondly, the availability of suitable case study sites may be restricted, as business and other organisations are not always willing to participate in CSR. The reporting of CSR can also be difficult, i.e. it is difficult to convincingly present the results of a CSR study such that its validity can be established.

In order to address the limitations of CSR, we supplement it with action research and design science research instruments. We use CSR to first study the policy making domain in a natural setting, from which we analyse the collaborative needs for policy making processes and the quality dimensions for policies. We use the outcome from this analysis to build the theory. We then use design science to design objects which are part of this theory. This theory is subsequently tested using action research. In other words, we use AR for theory application and evaluation concurrently, since CSR does not provide for theory testing. Also, to deal with the constraint of case organisations, we involve 2 new cases from Uganda and the Netherlands respectively, as explained in Section 2.2.4

### 2.2.2 Action research instrument (AR)

Action Research (AR) is an inquiry into how people design and implement action in relation to each other [Argyris et al., 1985]. It is committed to the production of new knowledge through seeking of solutions or improvements to 'real life' practical problem situations [Avison et al., 1999]. Eden and Huxham [1996], state that AR refers to research which, broadly, results from an involvement by the investigator with members of an organisation over a matter which is of genuine concern to them and in which there is intent by the organisation's members to take action based on the intervention.

According to Hult and Lennung [1980]'s definition, four major characteristics of AR are distinguishable. First, it aims at an increased understanding of an immediate social situation, with emphasis on the complex and multivariate nature of this social setting in the IS domain. Second, AR assists in practical problem solving and expands scientific knowledge – this goal extends into two important process characteristics: *i)* there are highly interpretive assumptions being made about observation; and *ii)* the researcher intervenes in the problem setting. Thirdly, AR is performed collaboratively and enhances the competencies of the respective actors  a process of participatory observation is implied by this goal. Fourth, AR is primarily applicable for the understanding of change processes in social systems.

AR can be characterised as diagnostic, problem focused, action-oriented, collaborative, situational, cyclical, ethically based, experimental, scientific, naturalistic, normative, re-educative, emancipatory, case-oriented, stresses group dynamic, balances research and social action, incorporates local knowledge, multidisciplinary, and contributes to human systems development [Susman and Evered, 1978, Argyris et al., 1985, Eden and Huxham, 1996]. The main critique about AR is that it is seen as a consultancy. AR is a popular research instrument among consultants. They consider AR to be a technique

for organisational development. As such, AR tends to look like consulting [Baskerville, 1999]. More so, with AR, the lack of impartiality of the action researcher may lead to researcher bias. The usual personal over-involvement of researchers with client organisations in AR projects may hinder good research by introducing personal biases in the conclusions. This is particularly true in situations involving a conflict of interests [Kock et al., 1998].

To address these weaknesses, we supplement AR with other research instruments, i.e. CSR and DSR. Specifically, we use the CSR to identify and analyse the quality dimensions we use to build the theory. We then use CE as a design science approach to design the design object which is part of this theory. We also use 4 iterations of collaborative workshops (see chapter 6) to generalise our results. During these workshops, additional researchers are employed (see Section 2.2.4) to address researcher bias.

### 2.2.3 Design science research instrument (DSR)

Design Research (DSR) involves the analysis of the use and performance of the design and the designed artefacts to understand, explain and to improve on the behaviour of aspects of information systems. Such artefacts include but are not limited to algorithms, human/computer interfaces and system design methodologies or languages [Orlikowski and Iacono, 2001]. The function of Design Science is solving problems by introducing new artefacts into the environment [Fuller, 1992].

Design research is divided into two parts, the research and the design. Kuhn [1996] and Lakatos [1978], define *research* as an activity that contributes to the understanding of a phenomenon. In the case of design research, all or part of the phenomenon may be created as opposed to naturally occurring. The phenomenon is typically a set of behaviours of some entity(ies) that is found interesting by the researcher or a research community. Understanding in most western research communities is knowledge that allows prediction of the behaviour of some aspect of the phenomenon. The set of activities a research community considers appropriate to the production of understanding (knowledge) are its research methods or techniques.

*Design* means to invent and bring into being (Webster's dictionary and thesaurus, 1992). Design deals with something new that does not exist in nature. Basically, design is concerned with achieving purposeful behaviour or goals. This means that as a science, it has two fundamental processes: construction and evaluation: *Construction* is a creative, problem solving process whereby artefacts are produced for intended purposes. *Evaluation* is an assessment process whereby the efficacy of produced artefacts is determined [March and Smith, 1995]. There are various methods recommended for

evaluating artefacts produced in design science, e.g. case study, field study, simulation, controlled experiments, etc [Hevner et al., 2004].

Since the design process requires clear iteration between construction and evaluation, it means that the quality and efficacy of a design artefact must be demonstrated by well-executed evaluation methods. Therefore among the many evaluation methods proposed by Hevner et al. [2004], we choose the field study, i.e. action research evaluation method. We use action research to monitor the use of artefact in the real-world policy making environment. In addition, we use action research to validate and evaluate the performance of the artefact for its qualities in an intervention.

### 2.2.4 Application to research context

To explain how to conduct individual steps in the inductive-hypothetic research strategy described earlier, the case study, action research and design science research instruments are employed. Case study focuses on describing the processes in the environment we are studying, i.e. the organisational policy making environment. Action research involves the intervention and use of the theory for improving the organisational policy making environment. Design science involves creating the knowledge and artefacts for designing quality process designs. Figure 2.2 visualises the application of these research instruments in the inductive-hypothetic research strategy.

#### Case study research instrument

The case study research is applied in the initial part of this research. We use this instrument to carry out an in-depth investigation to get a better understanding of the organisational policy making domain. The in-depth investigation is used as a second source to corroborate our first source of analysis (literature review) on the policy making domain. The in-depth investigation entails stakeholders' perspectives on various aspects. These aspects include stakeholders' understanding of an organisational policy and policy making and the business levels at which the organisational policy making is done. Other aspects are the stakeholders' understanding of the key characteristics, requirements and challenges/concerns of organisational policy making processes, including recommendations. More aspects are the stakeholders' understanding of a quality organisational policy process outcome and the key characteristics of a quality organisational policy making process. Finally, the aspect on the type of policy making process model followed/used (if any) when creating organisational policies. To perform the exploratory and explanatory studies, we visited three case organisations that have policy

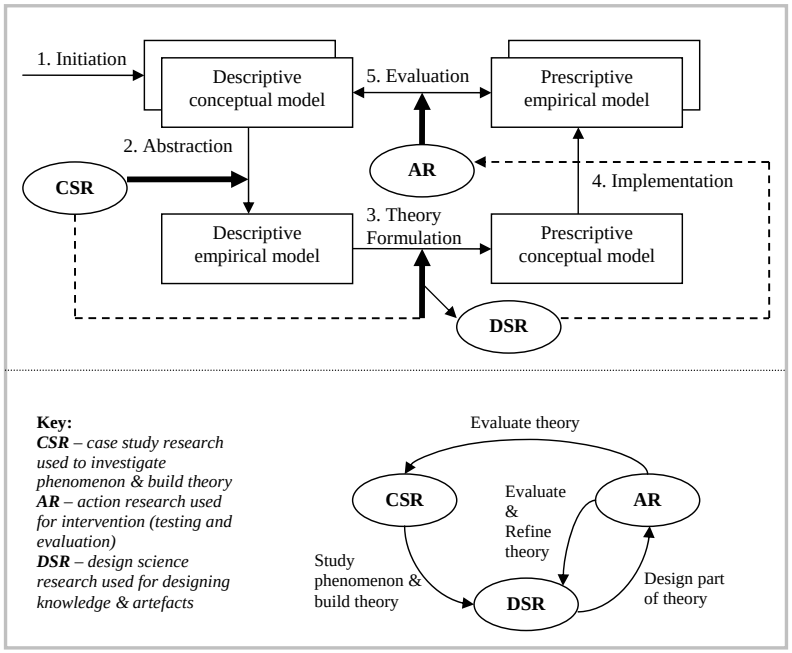



Figure 2.2: Application of Research Instruments in Inductive-Hypothetic RS

making functions. Interviews that have qualitative questions are used (see appendix A). After each interview, a summary of the answers was given to the interviewee to ascertain clarity of issues made. The outcome of this study is represented by the descriptive empirical model shown in Figure 2.2.

A literature review on the policy making domain was undertaken as a first source to our analysis of examining the policy making domain. The outcome from this analysis is represented by the descriptive conceptual model shown in Figure 2.2. The results from these two sources of data were used to determine the collaborative needs for organisational policy making processes and the quality dimensions for the resulting policies. The analyses from the collaborative needs for organisational policy making processes and the quality dimensions for policies were used to build the theory as shown in Figure 2.2. The details on the analysis of the policy making domain are provided in chapter 4. The details on the theory are given in chapter 5.

## Design science research instrument

Note that part of our theory requires designing artefacts, i.e. design objects. We therefore use the design science research instrument to design these artefacts. The theoretical basis of these artefacts is derived from the theory

above. A full description of the design approach used to support the designing of these artefacts is provided in chapter 3.

The goal of our research is improving organisational policy making processes and the policies being made in these processes using CE support. We therefore need to measure this improvement. The improvement to be made is reflected in the theory developed. To measure this improvement therefore, we need to implement and evaluate the theory in the field, i.e. policy making real-world. Following is a description of how we employ the action research instrument to test, validate and evaluate our theory.

## Action research instrument

To implement and evaluate our theory on improving organisational policy making processes and resulting policies, we follow Zuber-Skerritt [1991]'s action research instrument. We use this instrument in comparison to others, based on motivations described earlier. The action research instrument proposed by Zuber-Skerritt involves four activities/phases that can be carried out over several iterations. The first activity *Planning* is concerned with the exploration of the research site and the preparation of the intervention. The second phase *Act* involves the actual intervention made by the researcher. In the third phase *Observe*, collection of data during and after the actual intervention to enable evaluation is done. Finally, the fourth activity *Reflect* involves analysis of collected data and infers conclusions regarding the intervention that may feed into the Plan activity of a new iteration.

### Planning activity

Following the model described above, the 4 activities were executed as follows. In the Planning activity, we visited organisations used in case studies in Uganda to request to conduct collaborative workshops for implementation and evaluation of the theory developed. Unfortunately, due to various reasons such as busy schedules and getting stakeholders in one round/go, not all case organisations accepted to our request. To deal with this constraint, we therefore involved new case organisations from Uganda and the Netherlands. In total we had four case organisations in which we implemented and evaluated the theory.

### Act activity

The Act activity involves implementing the theory in the field. In the actual intervention, various people were involved and played different roles. The

people who were involved and their roles include:

- the *researcher* was responsible for preparing, facilitating and chairing the policy development workshops. The researcher also developed and guided the participants through the meeting agenda. She invited participants. More so, she evaluated the intermediary results.

- the *problem owners* consisted of people from the organisational policy making groups that gave us scenarios of policies to be developed using the process design. They also initiated the meeting goal and scope.

- the *participants* were the various policy stakeholders who accepted to our request to participate in the collaboration sessions. They gave their ideas and opinions on the meeting subject. Participants also evaluated the meeting and process design.

- the *additional researchers* consisted of colleagues from the two faculties (i.e. Faculty of Science, Radboud University in the Netherlands & Faculty of Computing & IT, Makerere University in Uganda) the main researcher works with. Some of the additional researchers are domain experts in the field of the policy type that was developed, and others helped in observing what transpired in the collaboration sessions. These gave additional evaluations on the sessions.

In chapter 6, we provide a detailed description of this activity.

### Observe activity

To evaluate our theory empirically (see prescriptive empirical model in Figure 2.2), we collected and analysed qualitative and quantitative data during the Observe activity. Three kinds of data collection instruments were used. These included observations, interviews and questionnaires. Data collected was used to make improvements during the reflect activity. In chapter 6, we provide a detailed description on what transpired in the observe activity.

### Reflect activity

Finally, in the Reflect activity, we use the evaluations of the prescriptive empirical model to make improvements. Part of this theory, i.e. the CPMP process design is a result of four iterations. In addition to reflecting on the theory we developed in this research through case studies reported, we also reflect on it in a number of papers we wrote. Each paper dealt with a special aspect of the theory, such as evaluation of CE support for organisational

policy making [Nabukenya et al., 2007c], theoretical foundations for designing quality collaborative PMPs [Nabukenya et al., 2009], and a process design for improving organisational policy making [Nabukenya et al., 2007a,b, 2008].

## 2.3 Research outline

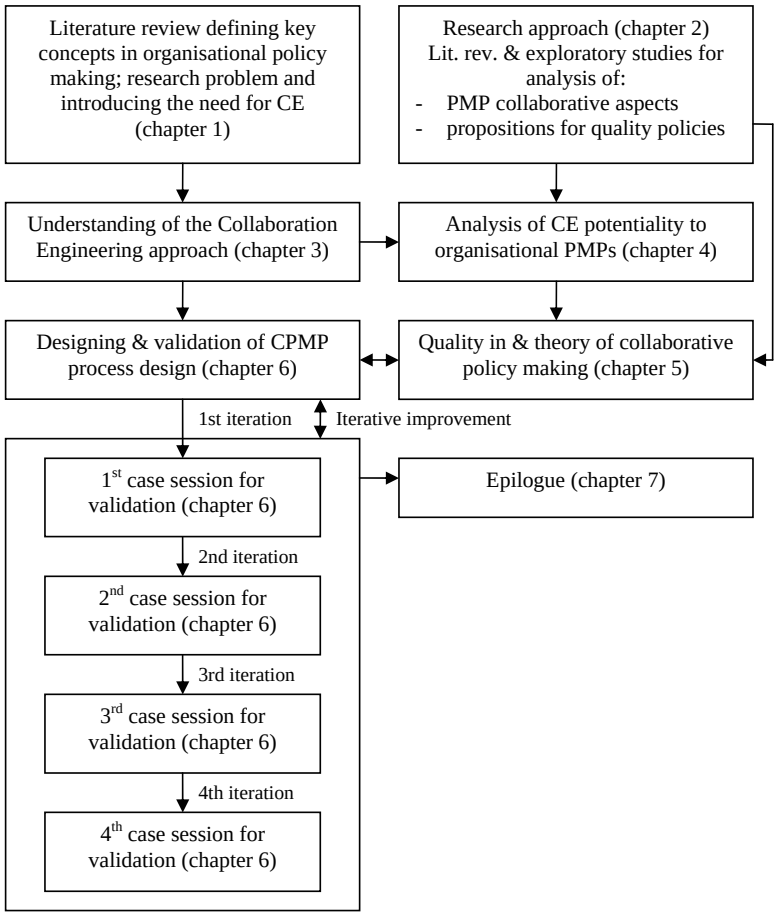



Figure 2.3: Research Outline

The outline of this research is visualised in Figure 2.3. As illustrated, chapter 1 of this thesis starts with an investigation of literature to define key concepts in organisational policy making (PMPs). The goal of this research is to improve the organisational PMPs and the resulting policies. It is on this basis that we introduce the need for CE as an approach that can meet

the collaborative concerns of organisational policy making processes.

Note that the claim made in chapter 1 involves the use of the Collaboration Engineering approach to solve the research problem. To support our claim therefore, we need to first understand what Collaboration Engineering (CE) is, and how it addresses designing of recurring collaboration processes for mission critical collaborative tasks that will deliver organisational value. This is described and discussed in chapter 3.

In chapter 4, we do an analysis of the potentiality of the CE approach to improving organisational policy making processes and the resulting policies. To perform the analysis we use both literature and the field exploratory studies. The analyses result to collaborative concerns in policy making processes. To get an impression of the general concerns in organisational policy making processes, we begin chapter 4 with a description of the case organisations involved in the exploratory studies on organisational policy making environments. This is followed by a discussion of the collaborative concerns in organisational policy making processes. We then discuss how CE can support to meet these collaborative concerns. We conclude this chapter with an argument that CE can be used to improve organisational policy making but needs a theoretical basis to guide this improvement.

In chapter 5, we present and describe the theory on good policies. This chapter begins with the exploration of the quality concept including the perspectives of the CE approach. It is followed by the definition of quality policies. The chapter concludes with the theoretical basis needed to guide the CE approach in designing the CPMP process design.

Remember that part of the theory in this research requires designing collaborative policy making processes. In chapter 6 therefore, and following the CE approach, we present and describe a process design for the collaborative creation of policies. We also describe how this process design is implemented and validated in the field. We begin chapter 6 with a description of the analysis for the CPMP process task. The process task analysis is based on the explorative studies on organisational policy making processes we described in chapter 4. This is followed by a description of the steps we performed in designing of the CPMP process design. We then describe the implementation and validation of the theory including the case organisations involved.

Finally, we reflect on the entire research and define future research in chapter 7.

# Chapter 3

# The Collaboration Engineering Approach

To unlock the promise of Collaboration Engineering (CE) in improving quality of organisational policy making processes and the resulting policies from these processes, we need to apply the theories of CE to policy making processes. To do this, we first need to understand the context of CE approach itself. CE is an approach to designing collaborative work practices for high-value recurring tasks, and deploying these processes for practitioners to execute for themselves without ongoing support from professional facilitators [Vreede and Briggs, 2005]. We therefore understand CE as an approach that should give us insights on guidelines of how to design and perform repeatable collaborative policy making processes. In addition, we understand CE to give us information on how practitioners can perform the repeatable collaborative processes to improve their work practices in comparison to their traditional way of working. More important, CE should enable us to understand how to use the way of thinking, working, modelling and controlling to address our research questions. For instance, following these methods, we interpret the CE way of thinking to represent how we look at policy making work practices and the characteristics that influence these processes. Also, we interpret its way of working to describe the steps to design the collaboration process for organisational policy making. Furthermore, we take the CE way of modelling to represent the graphical models that we use for the collaborative policy processes, while the way of controlling to describe the measures and methods we use to manage the process.

To this end, CE suggests to us details of various CE design tools/elements, how to use them, and the role they each play in designing repeatable collaborative processes. This means that when we use the design tools as prescribed in the CE approach, we should be able to get the utility we can derive from

them. While the CE approach offers guidelines on and measures of designing quality collaboration process prescriptions; what is provided is rather generic. Although these are all important, we still need to identify specific guidelines and measures that can work for specific application domains such as in our case. Specific guidelines can be useful when different stakeholders have different requirements. Specific guidelines and measures can enable attainment of quality of specific outcomes. It is on this basis, that we need to further understand what the CE approach is and how we can use it to address our specific needs.

In this chapter therefore, we explain the CE approach. First, we define Collaboration Engineering broadly. Then we present the roles involved in the CE approach. Finally, we give an overview of the approach, in which the CE scope, its applicability, benefits/added value, the phases involved in CE approach, i.e. design, transfer, implementation and sustained use of the CE collaboration process are addressed.

## 3.1 Definition of Collaboration Engineering

As earlier seen in chapter 1, a brief background to the CE concept was provided. In this chapter, we provide and discuss a broader definition of this concept. ***Collaboration Engineering (CE)*** is defined by Vreede and Briggs [2005] and unified in [Briggs et al., 2006b] as "an approach to designing *collaborative work practices* for *high-value recurring tasks*, and *deploying* those *designs* for practitioners to execute for themselves without ongoing support from professional facilitators".

Collaboration Engineering is an approach in which collaboration engineers design recurring collaboration processes that can be transferred to groups that can be self-sustaining in these processes using collaboration techniques and technology [Vreede, 2004]. This means, people involved in the collaboration process can carry out this process without added support. It is on this basis that Collaboration Engineering is a means to improving the quality of collaboration in recurring mission-critical tasks in organisations [Santanen et al., 2006, Vreede and Briggs, 2005, Briggs et al., 2003].

Mission-critical collaborative tasks are the primary focus of CE. In other words the aim of Collaboration Engineering is to create *sustained collaboration support* for a recurring mission-critical collaborative task [Briggs et al., 2006b, Vreede and Briggs, 2005]. ***Sustained collaboration support*** means an on-going value derived from process and technology support for groups to achieve their goal that is applied and maintained by members of the organisation without support from professionals [Kolfschoten, 2007].

The mission-critical tasks must be executed by teams rather than individuals. They must be executed frequently, and they should have a high payoff if successful [Vreede and Briggs, 2005]. A ***mission-critical collaborative task*** is defined by Briggs et al. [2006b] as "a task which creates substantial value, or which reduces the risk of loss of substantial value for organisational stakeholders". A description on a specific example, i.e. Risk and Control Self Assessment, and a highlight of more examples of recurring mission-critical tasks can be found in [Vreede and Briggs, 2005].

Apart from the concept of mission-critical collaborative task discussed above, there are other major concepts embedded in the definition of Collaboration Engineering that are necessary for us to define. These include 'work practice', 'high-value recurring tasks', and 'deployment'. We define each of these concepts as discussed in [Briggs et al., 2006b]:

Based on the CE definition, its core activity is designing collaborative work practices. The concept of ***work practices*** "is a set of actions carried out repeatedly to accomplish a particular organisational task".

Collaboration engineers design collaborative work practices for high-value recurring tasks. There are three characteristics of 'high-value recurring tasks'. First, the task is said to be ***collaborative*** "if its successful completion depends on joint effort among multiple individuals". In other words, CE focuses on collaborative tasks that must be executed by teams rather than individuals. Second, the task is of ***high-value*** "if the organisation derives substantial value or forestalls substantial loss or risk by completing the task successfully". That is to say, that the practice of the task over time creates high value. Third, a task is ***recurring*** "if it must be conducted repeatedly, and in a similar manner". In other words, each time a work practice is executed, a recurring task can cause an increase in the return of resources used in this execution effort.

The last part of the CE definition mentions that the collaborative work practice designs are meant to be deployed for practitioners to execute for themselves without ongoing support from professional facilitators. The major concept in this part of the definition is 'deployment'. ***Deployment*** is described as "putting into operation the CE work practice design in an organisation". Putting into operation means to stimulate practitioners to change to, and training practitioners to execute the collaboration process without additional support.

Lastly, Collaboration Engineering is an approach that involves designing collaborative work practices. To ***design*** (verb) in the Collaboration Engineering perspective, means "creating, documenting and validating a prescription for a collaborative work practice" [Briggs et al., 2006b]. A *prescription* also known as *collaboration process design* (noun) [Kolfschoten, 2007] is the

key product of CE approach. Briggs et al. [2006b] define the ***collaboration process design*** (noun) as "as an artefact (usually a document) that defines the sequence and logic of a set of steps for attaining some set of goals, and the conditions under which these steps will be executed".

## 3.2 Roles in Collaboration Engineering

Two key roles are distinguished in the Collaboration Engineering approach: the *collaboration engineer*, and the *practitioner* [Kolfschoten, 2007, Briggs et al., 2006b, Vreede et al., 2006, Vreede and Briggs, 2005].

1. *Collaboration Engineer* – is a person who designs reusable and predictable collaboration processes for recurring tasks and deploys them in organisations in a way that practitioners can execute these processes for themselves without the ongoing intervention of group process professionals (known as *expert facilitators*). This means that the collaboration engineer should pledge that the collaboration process design will successfully move a group to its goal. As unlike the professional facilitator, he will not be on hand to correct any deficiencies during its execution by practitioners. To this end, the collaboration engineer's skills required for process design are more wide-ranging than those a facilitator or practitioner requires. Thus, the collaboration engineer must make sure the processes they create are well-tested, predictable to consistently yield high-quality outcomes, reusable, and easily transferred to practitioners to execute for themselves since they are not group process professionals.

2. *Practitioners* – these are domain experts in an organisation that execute the collaboration processes transferred to them by collaboration engineers. They are not necessarily experts in designing new processes for themselves or others. Practitioners will normally execute the transferred design collaboration process as part of their regular work. In addition to executing the collaboration process, practitioners also perform the technical execution. Sometimes, a single practitioner may perform this technical execution. Other times, two practitioners may work together, where one moderates the process while the other operates groupware technology if that is applied. This means that if groupware technology is applied when executing a collaboration process, then there would be no need for skilled professional chauffeurs who have knowledge in terms of features and functions of the groupware technology platform; since this would be a standardized, routine

process for practitioners. Therefore the practitioners would need to know only operations and configurations of this groupware that is relevant to their specific process. This also means that the skills required for application roles are very light in comparison to those of professional facilitators.

Since we can now distinguish between the collaboration engineer and practitioner role, we can further elaborate on the CE approach. In the sections that follow, we first give an impression of the general overview of the CE approach. This is followed by a discussion on the preliminary phase in which the applicability and added value of the CE approach is addressed. Then, we further elaborate on the design approach followed to design, as well as the deployment (transfer, implementation and sustained use) of collaboration support in organisations.

## 3.3 Overview of the CE approach

In analysing the CE definition, we deduce that one aim of the CE approach is offering some of the benefits of professional facilitation to groups who do not have access to professional facilitators. It is based on this analysis that CE seeks to address two key challenges. The first is designing robust process prescriptions. That is, prescriptions that provide thorough understandings of how teams should accomplish their tasks. The second is about successfully transferring these process prescriptions to practitioners in ways that the practitioners can use to support groups without added professional support [Briggs et al., 2006b]. To address our research questions in pursuit of the CE goals therefore, CE researchers [Vreede and Briggs, 2005] suggest following the Seligmann et al. [1989]'s five ways model that gives a comprehensive description of an engineering approach to be followed. When using this framework/model for CE:

- the *way of thinking* portrays the concepts and theoretical foundations;
- the *way of working* describes structured design methods;
- the *way of modelling* describes conventions for representing aspects of the domain and the approach;
- and finally the *way of controlling* describes measures and methods for managing the engineering process.

In Figure 3.1, several phases that illustrate an overview of the CE approach are presented. The first phase involves identifying best practices

(regularly found in the body of reference knowledge) for a given task that a group needs to execute. The second phase involves designing the prototype collaboration process using best practices (identified in phase one), while following the collaboration engineer's reference knowledge on collaboration and facilitation. Executing and refining the prototype collaboration process in a number of pilots is done in the third phase leading to organisational roll-out of the final process in the last phase. Organisational roll-out involves practitioners' training in both the underlying principle and execution of the process as well as documentation of the design (process manual) for the practitioners [Kolfschoten et al., 2006].

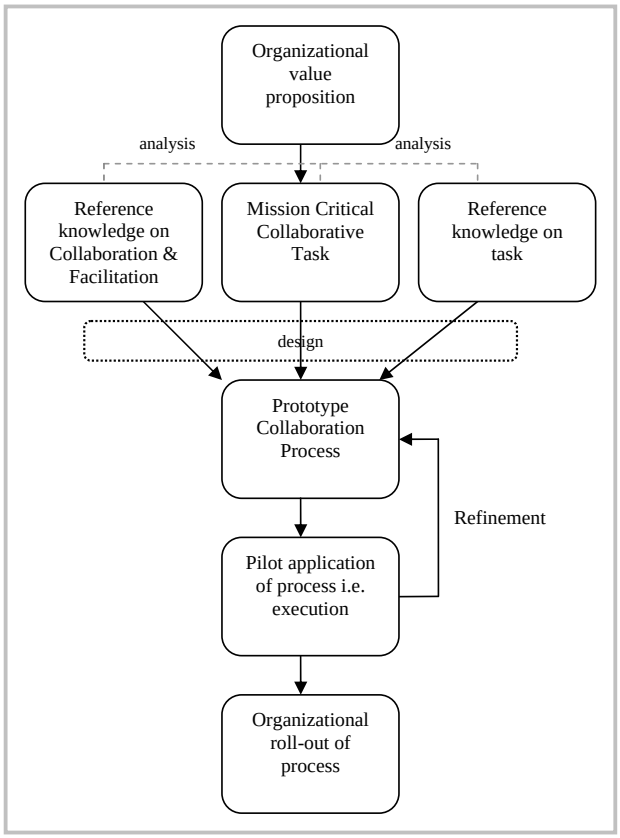



Figure 3.1: Overview of CE Approach (based on Vreede and Briggs [2005])

Using the model in Figure 3.1, we note that there are several phases involved in the CE approach. However, in this research, we deal with the first, second and third phases. That is the analysis, design, execution and refining phases. This is because, given the timeframe of this research, a full study on organisational roll-out in terms of the transfer and deployment of a collabo-

ration process to practitioners and organisations, is not viable. We therefore address the research questions in this thesis following the first three phases in the CE approach. We elaborate on these phases in detail in the proceeding sections. Nevertheless, we also explain the transfer, implementation, and sustained use of the collaboration process to practitioners and organisations but in less detail. But first, we discuss the preliminary phase in which the applicability and added value of the CE approach is addressed.

### 3.3.1 CE Scope, Applicability and Added Value

#### Collaboration Engineering Scope

The CE scope is comprised of 3 components. These include economic scope, collaboration scope, and the application domain scope.

1. *Economic scope* – CE focuses on high value recurring tasks in organisations. This implies that the practice of the collaborative task over time can create high value for organisations. In other words, each time a work practice is executed, a recurring task can cause an increase in the return of investment used in this execution [Vreede and Briggs, 2005]. With this effect, stakeholders will most likely encourage the use of the work practice [Vreede and Briggs, 2005]. Hence, for CE approach to render sufficient revenue or be of relevance to organisations, the organisational group process should fit within this economic scope.

2. *Collaboration scope* – for an organisational group process to be considered a collaborative task this process must be executed by teams rather than individuals [Vreede and Briggs, 2005]. That is, the process' successful completion (achieving a group goal) depends on joint effort from multiple individuals [Vreede and Briggs, 2005]. Joint effort (collaboration) characteristics may include among others discussing, evaluating, shared understanding, decision making, and consensus building [Kolfschoten, 2007]. The collaboration scope can be bordered based on the collaboration patterns (combinations of) generate, reduce, clarify, organize, evaluate, and build consensus [Briggs et al., 2006b, Vreede and Briggs, 2005]. A description of these patterns of collaboration follows in the process design subsection.

3. *Application domain* – as evident in the collaboration patterns, Collaboration Engineering is applicable to knowledge intensive organisational processes that require cognitive effort, more so, to result-focused tasks [Kolfschoten, 2007]; even though it could be applied to various domains.

In other words, CE is not appropriate in designing processes that teams can use to build relations between or to change behaviour in people.

### Collaboration Engineering Added value

The CE collaboration process added value can be described via 3 components:

1. *Financial added value* – where emphasis is on the efficiency in terms of costs and time over effort savings of the collaboration process. Gaining more efficiency in a collaboration process design can be through parallel working, and the use of a focused approach [Briggs, 1994].

2. *Quality increase of results added value* – if a collaborative approach is used, results from this approach are likely to score higher on a number of quality indicators, in addition to the financial added value. Indicators among others include gaining creativity arising from interactive brainstorming [Briggs, 1994] among the group participants as each can expound on one another's ideas. There is also increase in shared group results [Hengst et al., 2006] as opposed to perhaps subjective results, which can lead to more support of results and increased consensus on decisions to make.

3. *Additional added value* – more to the improvement in quality of results from a collaborative approach, are supplementary implied gains such as results support e.g. group owning and sharing of results, problem awareness, bonding in a team, and implementation commitment, among others [Kolfschoten, 2007].

On determining that the task can be supported by a collaborative approach, and also that the task will benefit from the CE approach, the next step is to analyse the task in detail. This is done in order to obtain the collaboration support and collaboration process design requirements and constraints. In the section below, we elaborate on the steps involved in designing a collaboration process, in which the analysis of the task is addressed.

## 3.3.2 Design approach for Collaboration Engineering

As described in the overview of the CE approach, a collaboration engineer follows a design approach in which he executes six steps in an iterative, non-linear fashion [Kolfschoten and Vreede, 2007] when designing a collaboration process. The six steps include *task diagnosis, activity decomposition, task-thinkLet matching, agenda building, design validation, and design documentation.* Nonetheless, to execute these steps, a collaboration engineer uses

various design elements which include *patterns of collaboration, thinkLets, design guidelines, and design models*. Figure 3.2 depicts the design approach. In this figure, the central blocks illustrate the different steps in the design effort. The white textboxes in between these steps illustrate results that serve as input for the next step. In the left part of the diagram, the external input for each step is listed. The design documentation demonstrated in the back setting of the diagram is a continuous activity performed during other phases. The iterative nature of the designing effort is illustrated by the black arrows. The description of the six steps in Figure 3.2 is based on [Kolfschoten and Vreede, 2007]. The description of the various design elements used in the six steps of the design approach is based on various literature sources. Each of the design elements is defined in the section it appears.

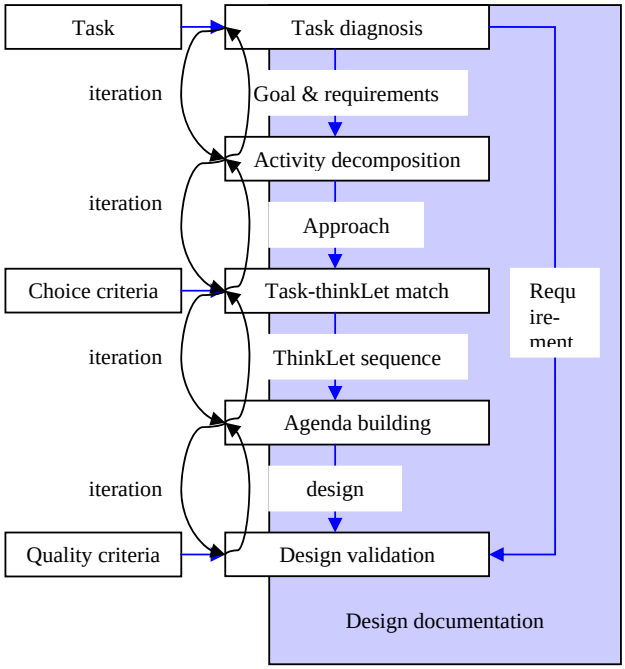



Figure 3.2: CE Design approach (based on Kolfschoten and Vreede [2007])

## Step 1: Task Diagnosis

This step involves undertaking interviews with the problem owner to identify the problem and the goal of the collaboration process. The problem owner comprised of stakeholders of the organisation, together with the CE group headed by a project manager form a team to establish, analyse and negotiate

about the collaboration process requirements and constraints with respect to the task, stakeholders involved, resources available, and the practitioners. The *task* involves issues such as the goal, deliverables, and objectives. The *stakeholders*' characteristics such as the group size, stakes, roles and needs are discussed. The *resources* such as time, knowledge, effort and physical resources are discussed. The *practitioners*' characteristics in terms of their skills, experience, personality, domain expertise [Kolfschoten and Vreede, 2007], among others are discussed. The information that results from this step should be documented in a problem description.

Several interviews and meetings with relevant stakeholders are performed to give insight in the goal and collaborative task. There are two forms of a goal. First, delivering a tangible result for instance to problem solving, or making a decision. Second, a group or state experience such as creating shared understanding [Kolfschoten and Vreede, 2007]. Also to consider in this step, is ascertaining of parameters that will need to be instantiated independently for each specific occurrence in which the process should be used. Another important aspect to consider is the development of measurement means for results and process quality assessment.

## Step 2: Activity Decomposition

In this step, the process to complete the task should be determined. To do this, the collaboration engineer needs to further analyse and decompose the task into activities. That is, the decomposition of the activities from the previous step should stop when each step cannot be decomposed any further in terms of the patterns of collaboration [Kolfschoten et al., 2006]. Collaboration engineers use patterns of collaboration to determine how a group will accomplish each task. As groups move through the steps/phases, the patterns of collaboration characterise their activities [Vreede and Briggs, 2005]. That is, six ***patterns of collaboration*** are defined in a way that they are meant to move a group from a starting state to an end state [Briggs et al., 2006b, Vreede and Briggs, 2005]:

- *Generate* – move from having fewer concepts to having more concepts. The goal of generate is for a group to create concepts that have not yet been considered;

- *Reduce* – move from having many concepts to having a focus on fewer concepts deemed worthy of further attention. The goal of reduce is for a group to reduce their cognitive load by reducing the number of concepts they must address;

- *Clarify* – moving from less to more shared meaning for the concepts under consideration. The goal of clarify is to help the group have more shared understanding, meaning and interpretation of the concepts;
- *Organize* – move from less to more understanding of the relationships among the concepts. The goal of organisation is to reduce the effort of a follow-on activity;
- *Evaluate* – move from less to more understanding of the benefit of concepts toward attaining a goal. The goal of evaluation is to focus a discussion or inform a group's choice based on a judgment of the worth of a set of concepts with respect to a set of task-relevant criteria;
- *Build Consensus* – move from having more disagreement to having less disagreement among stakeholders on proposed courses of action. The goal of consensus building is to let a group of mission-critical stakeholders arrive at mutually acceptable commitments.

## Step 3: Task-ThinkLet Match

This step involves matching ***thinkLets*** to respective activities once they have reached the lowest level of decomposition. The patterns of collaboration do not explicitly detail how a group could conduct a recurring collaboration process, especially with teams who do not have professional facilitators at their disposal [Briggs et al., 2003]. This can be achieved by the key CE concept: the *thinkLet*. A *thinkLet* is defined by Briggs et al. [2006b, 2003] as "a named, packaged facilitation intervention that creates a predictable, repeatable pattern of collaboration among people working together toward a goal". Thinklets benefit the design and transfer of collaboration processes in many ways among which include: permit ease of communication, documentation and transfer of a collaboration process to others; improving productivity of and quality of work life for groups by enabling rapid development of collaboration processes; creation of particular dynamism within groups, though each instantiation of the pattern would differ from all other instantiations [Vreede et al., 2006, Vreede and Briggs, 2005]. Recently, over 70 thinkLets have been documented [Kolfschoten, 2007, Vreede et al., 2006]. Table 3.1 illustrates examples of thinkLets with respective patterns of collaboration and the purpose for which each respective thinkLet is meant to achieve during process execution. More examples can be found in [Vreede et al., 2006, Vreede and Briggs, 2005, 2001].

ThinkLets are used by collaboration engineers as reusable building blocks for creating logical designs for collaborative work practices [Briggs et al.,

Table 3.1: Examples of thinkLets with their respective Collaboration Pattern

| **ThinkLet Name** | **Pattern of Collaboration** | **Purpose** |
|---|---|---|
| DirectedBrainstorm | Generate | To generate, in parallel, a broad, diverse set of highly creative ideas in response to prompts from a moderator and the ideas contributed by team mates. |
| BucketSummary | Reduce and clarify | To remove redundancy and ambiguity from broad generated items. |
| BucketWalk | Evaluate | To review the contents of each bucket (category) to make sure that all items are appropriately placed and understood. |
| MoodRing | Build Consensus | To continuously track the level of consensus within the group with regard to the issue currently under discussion. |

2006b]. The design for this collaboration process is composed of a sequence of thinkLets. Kolfschoten et al. [2006] and Vreede et al. [2006] refer to a *thinkLet sequence* as recurring combinations of multiple thinkLets that may be reused in a variety of designs. ThinkLets execution may necessitate tools that give one or more capabilities. Briggs et al. [2006b], Kolfschoten et al. [2006] and Vreede et al. [2006] describe *capabilities* as means necessary for contributing, recording, and manipulating concepts. Pages and rights are used to express capabilities in a thinkLet [Briggs et al., 2006b].

During the execution of a thinkLet, and via the provided capabilities, it is a requirement for participants to carry out definite things such as add, edit, move, delete, judge ideas, among others, as individuals. These definite things are referred to as *actions* [Kolfschoten et al., 2006, Vreede et al., 2006]. To change a set of thinkLets dynamics in some predictable way, reusable rules are applied. These are referred to as *thinkLet modifiers* [Vreede et al., 2006]. There are basic instructions that need to be executed by participants in order to create the intended pattern of collaboration and result of a thinkLet. These basic instructions are known as *rules*. According to Kolfschoten et al. [2006] and Vreede et al. [2006], *rules* describe actions that participants must execute using the capabilities provided to them, under some set of constraints. A *constraint* is a limitation or guideline on how an action is to be performed [Briggs et al., 2006b]. It should be noted that the actions are executed under constraints, according to the CE approach [Vreede et al., 2006]. Also to note is that a rule is specified for a specific role [Kolfschoten and Vreede, 2007]. Kolfschoten et al. [2006] and Vreede et al. [2006] define a *role* as an actor that is assigned to a collection of rules that guide the actions of this actor (some set of participants). Different participants must behave according to different rules (with different actions, constraints and/or capabilities) in some

thinkLets [Vreede et al., 2006].

### Design guidelines/ThinkLet Choice criteria

Choosing or combining and instantiating a set of thinkLets for a high quality design is made following a number of ***design guidelines/choice criteria*** [Kolfschoten and Vreede, 2007, Vreede et al., 2006]. These include among others:

- *Goal achievement* – it is a requirement for the design to produce results required to reach a group goal. This therefore requires a collaboration engineer to set the goal, and also specify tangible deliverables required to reaching a group goal, and also how each of the steps in the collaboration process contribute to creating the deliverables and achieving the goal;
- *Goal congruence* – achieving a group goal requires stakeholders in a session to commit to the group goal, and also resolving conflicting goals. To attain their commitment therefore, stakeholders should be able to address their concerns and make contributions;
- *Consensus* – achieving some level of consensus requires taking into account different perceptions of the problem, participants' understanding of the different perceptions of a goal and outcome, as well as participants' supporting of the goal and outcome of the session;
- *Cognitive load* – it is required that the design gives enough variation to keep participants' attention and focus. In addition, is important that the timeframe of the design is feasible, and that there are enough breaks. Lastly it requires questions and assignments to be clear and unambiguous;
- *Structure and Focus* – to attain efficiency in collaboration, the structure of the design matters. Therefore, the steps should be combined in a way that builds a logic sequence; yet making sure that each step leads to the goal;
- *Group fit* – because groups are different in terms of group characteristics such as its members, size, culture, norms, among others; it requires that an analysis is done on the group, so that the design is adjusted to fit the significant group characteristics;
- *Facilitator fit* – it is required that the design fits the facilitator's experience and capabilities.

## Step 4: Agenda Building

The ***Agenda Design*** *(design model)* entails a set of vital parameters needed to define each collaboration process step [Kolfschoten and Vreede, 2007]. The design should also show introductions, breaks and other steps in the process description. Also all relevant information for each thinkLet should be specified in the agenda. Table 3.2, visualises the format for an agenda design including the vital parameters.

Table 3.2: Agenda Design Format (based on Kolfschoten and Vreede [2007])

| **Task Number** | **Task** | **Questions/ Assignments** | **Deliverable(s)** | **ThinkLet and Pattern** | **Time** |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |

The first column represents the task number. The task is shown in the second column. The third column is reserved for the questions or assignments to the group. The deliverable of the activity, i.e. a specification of the expected or general output, is shown in the fourth column. The fifth column shows the thinkLet and the pattern it aims to evoke. Finally the estimated time for each activity is shown in the last column. The first column is to identify and number the activities.

### Facilitation Process Model

After the agenda is drawn, the collaboration process flow can be designed based on information in the agenda. This process flow is graphically represented using a facilitation process model. The ***Facilitation Process Model* (FPM)** *(design model)* visualises the sequence of thinkLets, the process flow decisions and critical elements in this flow that have to be considered during the execution of the collaboration process [Vreede and Briggs, 2005]. In other words, the logic of the process flow from activity to activity is the main focus of the FPM. Specifically, the FPM model can be used for training and as a reference for the practitioner during preparation and execution of the process [Kolfschoten, 2007]. This model contains elements which include: *i)* the sequence of activities; *ii)* decisions, criteria for the decisions and alternative paths of the process; *iii)* the pattern of collaboration that will occur from

the activity and the result; *iv)* time for each step; *iv)* activity name; *vi)* step number; and *vi)* thinkLet name.

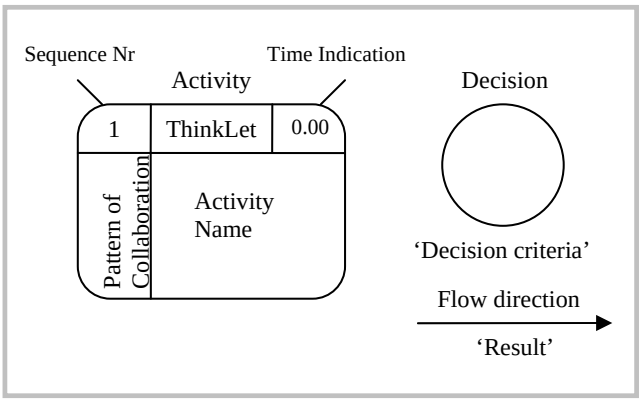



Figure 3.3: FPM Notation (based on Vreede and Briggs [2005])

Figure 3.3 depicts the FPM notation used to document the process flow. The FPM notation is comprised of three symbols. The rectangle with rounded corners is a notation to represent each activity in the process. The rectangle notation is divided into five major fields: the descriptive name for the activity is portrayed in the largest field; the pattern of collaboration to be instantiated in the activity is via the left lower field; the thinkLet name for the instantiation is shown in the top middle field; the step number is in the left upper side of this top field, and the time for each step is in the right upper side of the top field. The decision points are represented by a circle, and the decision with criteria is shown along the arrows leading from the decision. An example of the facilitation process model is shown in appendix E.

## Step 5: Design Validation

This step involves validating the process design. Kolfschoten and Vreede [2007] propose four methods of validation:

- *Pilot testing* – implementation of the collaboration process, however on a small scale, specifically to enable assessment of the quality of the process by the team members;
- *Walk through* – the collaboration process final assessment is conducted by the practitioner and client or some participants by walking through the process activities;

- *Simulation* – a collaboration engineer does a role-play himself by stimulating the design in such a way that he tries to answer questions he poses to himself in the design, with an aim of taking into account that his answers can be used in the activity that follows;

- *Expert evaluation* – a collaboration engineer may discuss the process design with expert colleagues with an aim of coming across enhanced solutions for activities that are complicated as well as thinkLets or methods for a given challenge.

### Step 6: Design Documentation

In the final step, a collaboration engineer produces design documentation (documents) that would be handed off to the organisation practitioner. The problem descriptions, process prescription, detailed agenda together with the facilitation process model, are packaged as documentation [Kolfschoten et al., 2006]. In other words, a design template is created based on this documentation to give practitioners complete information to support training and execution of the design.

Even though the steps in the design phase of CE approach appear to follow a linear style, it is noted that the design process in reality is not linear in nature. The CE approach has room for iteration and additions depending on the problem condition, e.g. type, complexity, collaborative task scope, organisation collaborative task insights given, at hand. In other words, this design approach should be observed as a set of design steps [Vreede and Briggs, 2005].

After designing the collaboration process, it is then deployed to organisations. As mentioned in section 3.3, this research does not fully take care of the deployment of the collaboration process. Therefore, in the sections that follow, and in less detail, we provide a description of the transfer, implementation, and sustained use of the CE collaboration process based on [Kolfschoten, 2007].

## 3.3.3 Transfer of the CE collaboration process

This phase involves the collaboration engineer transferring the collaboration process design (prescription) to the practitioner, in which three vital learning efforts are required of the practitioner. The first learning effort is that the practitioner trains on how to execute the collaboration process. This training involves introduction of the transfer approach, collaboration process, thinkLet components which are also explained in detail. More so, in the training,

is the practice or simulation of the process with an aim of gaining experience by practitioners. In the second learning effort, the practitioner prepares him/herself for a first application of the process. It is in this learning effort, that the practitioner applies the process design to a particular group of people within this organisation. This preparation involves various things such as verification of the goal and scope for the particular iteration of the process, participant selection, tools and logistics arrangement, instantiating variable content such as categories, voting criteria, of the process. In the final learning effort, the first trials of the collaboration process execution occur. It is during these trials that problems and difficulties on the design may be revealed, and these can therefore be a basis for process design adjustments and refinements. In addition to revealing areas that may need adjustments, the trials also enable the practitioner to improve on his/her skills and expertise which can enable him/her to run the refined process without help.

### 3.3.4 Implementation of the CE collaboration process

On completion of the transfer phase, the collaboration process is implemented in the organisation. Implementation involves managerial activities, planning and organisation. Successful implementation of the collaboration process very much depends on the success of the practitioner, just as it is in facilitation [Nunamaker et al., 1997]. Failure of the practitioner creates effects such as loss of credibility, unsatisfactory quality results, process inefficiency which might lead to its rejection and thus resource wastage.

### 3.3.5 Sustained use of the CE collaboration process

This phase involves organisational roll out of the collaboration process after practitioners' successful training and performance with their first sessions. In other words, the organisation can now gradually acquire ownership of the process. Gradual ownership can be launched by management through a number of ways such as controls and incentives that motivate the use of the collaboration process, lobbying team leaders' and lower level managers' support, and setting-up a community of practice by practitioners of this organisation to exchange experiences and lessons learned. Management should also regularly evaluate the collaboration process and its benefits to the organisation.

## 3.4 Conclusions about the CE approach

In this chapter, we have seen that CE focuses on the design of collaborative work practices to achieve specific types of tasks in organisations. These specific types of tasks are the high-value recurring tasks. We have seen that, in order to design the collaborative work practices, for instance like collaborative policy making processes, CE suggests to us a design approach consisting of six steps in which various design tools and elements are used. The CE benefits such as the financial added value and ability to attain quality results gives us the value we can derive from CE. These benefits can also have a great impact on an organisational level. Thus far, having scrutinised the CE approach and its benefits, in chapter 4 we proceed to examine whether this approach can indeed provide for the collaborative needs of organisational policy making processes. And based on the outcome of this analysis, we will proceed to argue how the quality of these processes may benefit from CE.

# Chapter 4

# Applying Collaboration Engineering to Organisational Policy Making

Organisational policy making (PMP) is a collaborative task in which many stakeholders are involved. In chapter 1, we give examples of policies that stakeholders collaboratively develop. In many cases policy making uses authority top-down approaches to solve policy problems. Policy making is also a knowledge intensive and result-focused process that requires cognitive effort from stakeholders involved in order to solve the problem at hand. The creation of policies involves an iterative and collaborative task that entails three broad activities. These are problem definition, solution proposals and a consensus-based selection of the line of action to take. The three broad activities in the creation process of policies are collaborative in the sense that each of them involves interaction, discussion, evaluation, making decisions, and building consensus, among others, by stakeholders involved in order to produce a policy.

Often, the results of these process activities are not what the different stakeholders intended. This is due to the fact that different stakeholders with multiple backgrounds and different interests, have to be brought together to produce an acceptable policy result. These characteristics/concerns follow from the collaborative nature of the process activities. As discussed in chapter 1, we aim to deal with these concerns by enhancing the collaborative aspects involved in the process activities of policy making. To achieve our aim, we apply the practice of Collaboration Engineering (CE) to the field of organisational policy making.

Nevertheless, before we can convince ourselves about CE being a potential technique to address underlying collaborative challenges in PMPs, we want

to acknowledge that some approaches have been attempted to facilitate the same cause. In this chapter therefore, we first highlight examples of existing approaches to facilitating PMPs. Then we describe the exploratory studies perspectives. The results from the perspectives are used in several aspects of this research including this chapter. Based on discussions in [Nabukenya, 2005, Nabukenya et al., 2008] and using part of results from the exploratory studies perspectives, we continue with a discussion on the concerns in organisational PMPs that are of a collaborative nature. This is followed by a discussion on how CE can meet these collaborative concerns. We conclude this chapter with our analysis on CE being a potential technique in addition to existing approaches that have been attempted to support PMPs.

## 4.1 Related work on approaches to support PMPs

Research shows that a large number of approaches have been developed to manage the complex interaction processes in policy making. Such researches include among others [Herik, 1998, Bruijn and Heuvelhof, 1999, Klijn and Koppenjan, 2000, Roelofs, 2000, Riet, 2003]. First, let us look at Bruijn and Heuvelhof [1999]'s *Process management approach*. In their approach, the process agreements can facilitate the cooperation needed to realise policy progress. Process agreements set out the rules of the game that the actors involved must abide by during the decision-making process. The process agreements are designed by the process architect in cooperation with the actors. The process architect then has the task to maintain the rules of the game as agreed in the negotiation process. A key element of this approach is the management of distrust. The approach stresses that each actor be given sufficient room to serve their own interests. Another approach we look at is by Klijn and Koppenjan [2000]. Klijn and Koppenjan [2000] designed the *Network constitution approach*. In their approach, the focus is on achieving changes in the institutional characteristics of a policy network. Here, a policy network is defined as (more or less) stable patterns of social relations among interdependent actors that take shape around policy problems and policy programs. Another attempt is by Riet [2003]. This researcher developed a theory of requirements that a multi-actor policy setting puts on the analysis. The theory is meant to be a guide for structuring a policy analysis in such a way that useful knowledge is produced. Finally, Herik [1998] designed an approach in which preparation and execution of policy meetings is supported by Group Support Systems (GSS). This approach takes into account the

rational and social interaction characteristics of policy processes.

As seen in the preceding paragraph, we note that each of these approaches has a specific goal the researchers wanted to achieve when designing their respective approaches. However, we observe that all these approaches have a general characteristic, i.e. that they mainly dealt with changing behaviour or building relations (team building) between stakeholders involved in a policy making process. The sequence and logic of policy making process activities that stakeholders can use to attain a group goal is missing from these approaches. CE can be used to address this challenge. But first, we need to understand the organisational policy making domain from which the concerns that are of a collaborative nature found in these process activities are analysed and we claim can be met by CE.

## 4.2 Exploratory studies on organisational PMPs

Given the research description as seen in preceding chapters and in order to achieve its aim, one of the most important activities is to establish reference knowledge on the policy making domain. To establish the reference knowledge on this domain therefore, we performed exploratory studies on policy making environments. The exploratory studies were performed following the research approach (strategy and methodology) described in chapter 2. We visited 3 case organisations in Uganda that have policy making functions. The goal of the exploratory studies was to carry out an in-depth investigation to get a better understanding of the real-world organisational policy making environments from which to base the need to improve the policy making processes. The in-depth investigation entailed stakeholders' understanding/perspectives on issues among which included an organisational policy and policy making process, business levels at which organisational policy making is done, key challenges/concerns in organisational policy making processes. Furthermore, we got their understanding/perspectives on a quality organisational policy outcome, key characteristics and requirements of a quality organisational policy making process and finally the type of policy making process model followed/used (if any) when creating organisational policies.

The organisations that participated in the exploratory studies include Population Services International (PSI), Actionaid-Uganda, and Ministry of Finance Planning and Economic Development (MOFPED). We interviewed a population of 10 subject experts distributed as follows: 3 from PSI, 2 from Actionaid-Uganda, and 5 from MOFPED. The population interviewed con-

sisted of managers from all kinds of departments such as IT/MIS, Finance and Administration, Research, Monitoring and Evaluation, and Human Resource. Interviews that have qualitative questions were used. An interview instrument that we used is shown in appendix A. After each interview, a summary of the answers was given to the interviewee to ascertain clarity of issues made.

In this section, we further elaborate on the case study descriptions. We first provide a brief background of each of the case organisations that participated in the exploratory studies. We then describe the perspectives on organisational policy making processes from synthesised feedback of the study interviews. Lastly, we provide the analysis that we obtained from the outcome of these exploratory studies perspectives. The analysis on concerns found in organisational policy making processes is given in the section that follows this one.

### 4.2.1 Case study perspectives on organisational PMPs

## Case 1: Population Services International-Uganda

#### The Background

Population Services International-Uganda (PSI) is a non-governmental organisation operating under the mandate of the Ministry of Health in the areas of malaria, HIV/AIDS, safe water, and reproductive health. The mission of this organisation is to measurably improve the health of vulnerable Ugandans, using evidenced based social marketing and other proven techniques that promote sustained behaviour change with added emphasis on rural population. Their core values are innovation and creativity, open communication and teamwork, transparency and accountability, speed and efficiency, as well as recognition and reward.

#### The Perspectives

#### Organisational policy, PMPs & business levels it is performed

Policies are documents that outline guidelines of what needs to be done by management and users of a given policy. A policy is a set of rules/guidelines meant to streamline flow of work. The documents should be relevant to the need of the organisation. It is considered as frameworks for actions that help staff get on with the job they need to do. It is also looked at in the perspective of a set of principles or rules that provide a definite direction for the organisation. It is taken to be standing plans that provide guidelines for

decision making. PSI uses organisational policies as best practice. This is because they set standards for the organisation.

Policy making is considered as steps or procedures taken to design policies. It is a process of tackling organisational problems, such as enforcing guidelines to maintain order in organisational processes, challenges of how, when and what to use assets. It is a process that entails identifying a need, who is to do what, and coming up with a policy. Policy making in PSI is done in an unstructured way. Normally in this organisation, the need starts the process, then top management will react to this need, from which they will develop a common understanding of how to look at things i.e. how to solve the problem.

Policy making is done at management level, where policy goals are formulated, and at times at departmental level. It depends on the type of policy to be designed. Some policies are ad hoc and others strategic (developed for long-term). In other words a situation may arise that triggers off the need to develop a policy.

**What makes organisational policies to happen in PSI?**

The need for clarity, improve quality of service, decision making, or if there are new developments in structure of things, or in the organisation. Policy process is triggered by observed events. In the case of clarity, an example would be when it is a requirement for instance a donor requirement.

**Key characteristics of PMPs**

PMPs are characterised as democratic, open process, permit stakeholder involvement, consultative process by management and with various section heads. By consultative they mean that various reviews are done, staffs are informed about the new policy, trainings are conducted for staff to have the knowledge and skills to implement the policy, and changes are made as the need arises.

**Key requirements of PMPs**

The following are required: openness; involvement of key stakeholders; consultation with the section heads; what the policy process develops is useful to workers and management; should meet legislative requirements such as labour laws; improve the quality of service provided; employees must be trained on the knowledge and skills to implement the policy developed in this process; stakeholder participation leading to deliberations; and stakeholder understanding of what the policy will be and how it will work.

### Key deliverables and qualities of PMPs

The PMP is expected to deliver a policy document. The designed policy should be useful and meet the importance or need it is meant for. The policy should outline controls. Users should adhere to the policy. The quality of deliverables (policy process outcome) include validity, easy to understand, fewer complaints from users, readable, accessible and known to the users, clarity i.e. spelling out for example goals and objectives, user adherence, feasible, possible to implement, suit the environment for which it is intended for, in other words tackle the problem for which it was intended, and should be able to answer any queries that may arise regards the policy.

### Quality of PMPs

The process is expected to allow stakeholders to air out their views regardless of these views being considered or not. The process should permit back and forth consultation (consultative effort). It should be timely, that is, the process should not take so much time. The process should be in proportion to the significance/importance and coverage of the policy. Active engagement of the stakeholders is also expected of the process.

### Type of PMP model followed/used (if any) when designing policies

PSI follows an iterative and interactive process model. By iterative and interactive they mean a consultative and informal way of creating the policies. It is normally an open-door process, where stakeholders walk in to different departments to consult, and then make policies accordingly. The process is normally quick and fast as the stakeholders prefer doing things fast, keeps the policies small and flexible because of the kind of work PSI does, i.e. the policy documents are not so extensive.

## Case2: Ministry of Finance, Planning & Economic Devt

### The Background

The Ministry of Finance, Planning and Economic Development (MOFPED) derives its mandate and functions from the 1995 Constitution of the Republic of Uganda and other related subordinate laws, including the Budget Act (2001), the Public Finance and Accountability Act (2003) and acts establishing agencies and auxiliary organisations. Accordingly, the Ministry plays a pivotal role in the co-ordination of development planning; mobilisation of public resources; and ensuring effective accountability for the use of

such resources for the benefit of all Ugandans. The Ministry discharges this responsibility in the context of her Vision, Mission, Mandate and Functions.

### The Perspectives

#### Organisational policy, PMPs & business levels it is performed

A policy is considered to be a working framework by which an organisation is able to address broad range of objectives in a structured manner. Policies are high-level operational guidelines which an organisation uses to execute its roles and mandatory steps taken to address a problem. It is a statement outlining aspects of who, what, how to communicate between different entities. They are rules and procedures, i.e. policies are a way of enforcing and complying with the rules and regulations. It is a framework in which an organisation determines its direction or how to move to achieve certain goals. It is a high-level statement that provides a framework that guides the actualisation of set objectives.

Organisational policy making is considered to be a complex, iterative and participatory process that involves many stakeholders to come up with a set of critical success factors. It is the process of seating down to work out given objectives, do a situational analysis, look at organisational environment, from which a set of rules which an organisation aims to attain to achieve a given policy outcome. It is a process of identifying a problem with its causes, then the measures or strategies to solve the problem are identified and discussed to solve it. It is a process of addressing a problem by finding measures to solve that problem, for instance solving the problem on IT security. Sometimes, policy making is considered to be an ad hoc process; it could come as a political statement. Other times, it could be a detailed planning process i.e. high-level preparation, process of internalising, assessing the feasibility, assessing possible impact and arriving at intended policy.

Policy making in the Ministry is done from top management specifically dealing with long-term (strategic policies), national, high-level, and ICT settings. The top management usually set the goals they want the policy to achieve. Some times, given the nature or structures of this organisation/institution and the type of policy to be developed, policy making may crop-up from operational to top management.

#### What makes organisational policies to happen in MOFPED?

Organisational policies happen when there is need to address specific problem/issue, objectives such as may wish to make reviews, address changes

e.g. such as when the legal framework changes, then it changes in the constitution, etc, and enhance service delivery. It depends on the situational need of the Ministry. This means, the policies are most of the time demand-driven/triggered, for instance, the need may arise from the community, president, and result of reforms which could be initiated from donors.

### Key characteristics of PMPs

The PMP is characterised as a round table, complex, very slow, involves a lot of research, consultative, participatory, external influence e.g. from donors etc, authoritative, sensitive, quite involving, internal politics (power play) and negotiations, with wide-range implications, and many different stakeholders. The process must be kick-started by an identified problem, and must have a competent team to discuss and identify solutions to this problem. The solutions arrived at should be able to be implemented. The timeframe in which to work and assess impact of the policy should be specified. The PMP outcome should be clearly supported by the beneficiaries. There should be clear leadership or structure of how to interface with concerned parties.

### Key requirements of PMPs

The first key requirement is that there is existence of a problem to solve. In other words, it requires identifying the need for the policy or what you want the policy to achieve. Another key requirement is familiarity with legal requirements such as rules and regulations, institutional framework (a document to mandate the Ministry to spearhead the process). In addition there should be existence of resources such as requisite human resource e.g. expertise/sector experts, team to perform implementation and monitoring, management commitment, information search or research e.g. assessing existing policy versions, intensive consultation with concerned parties, line Ministries and other institutions to get their buy-in, assessing impact of solutions, etc, finances/logistics, and physical resources. It also requires involvement, participation and support of stakeholders (political, internal, and external). The identification of policy ownership, as well as awareness in both political, technical and the public at large, and the leadership, are other important requirements. The process should be adequate (address the problem), complete, and relevant.

### Key deliverables and qualities of deliverables PMPs

The PMP should deliver a policy document, i.e. a policy framework document with the identified problem with its solutions clearly articulated.

The policy document should define policy objectives, frameworks, compliance/enforcement, clear institutional mandate, policy ownership, guidelines such as the shift in regulatory/legal rules of how things should be done, a clear work plan that spells out roles/responsibilities to persons, milestones, time frames and how it is to be disseminated to the intended audience.

The qualities of these deliverables are achieving the policy goal and objectives to avoid discrepancies and encumbrances. In other words, the policy process outcome should address the identified problem by articulating the measures/solutions. A good policy is technically neutral i.e. allows people to provide solutions; does not tie to only one thing. The policy process outcome should be understandable, simple, and be able to un-wind if it is producing results or working as expected. It should be able to be implemented and realistic. Also other qualities are reflected in levels of: involvement and participation by key stakeholders, negotiation, ownership, usage/consumable, acceptance, awareness, consultation during policy making e.g. quality of data and information used etc, expertise of persons guiding the process, level of consensus and level of flexibility to permit dynamism. There should be an understanding among stakeholders and about the process and intended results. More so, a good policy process outcome is one that articulates the institutional framework to implement/address the various solutions (can add value to the operations of the institution), and shows how the monitoring and evaluation shall be carried out to assess the policy outcome.

### Quality of PMPs

The PMP should enable stakeholders to identify the gap in order to understand their destination. In other words the PMP should be used as a good strategy of getting to the destination. It should not be too complex. It should assist stakeholders to arrive at consensus rather than create a win-loose atmosphere. This in the long run should enable attainment of ownership. The PMP should enable adequate involvement and consultation with and among stakeholders. The PMP should not take too long, yet not rushed; it is important to have everyone on board and to avoid paralysis i.e. people being affected by policy fatigue. It should be well resourced such as well financed, time framework, gathering information for the policy and defining the scope of the policy. The process should permit candid discussions without conflicts among stakeholders to enable satisfactory decision-making. In other words, it should provide a mechanism of reaching consensus in order to arrive at right decisions.

### Type of PMP model followed/used (if any) when designing policies

It is a structured but iterative and interactive model due to the fact that different information is needed from different sector expertise, some times from line Ministries and other related institutions before decisions are made. Therefore there is need for consultation to seek neutral grounds, and also involves a lot of convincing to be able to reach consensus.

## Case 3: Actionaid-Uganda

### The Background

Actionaid Uganda is a rights based organisation that focuses on the rural poor in developing countries. Its programs are in the areas of Education, Food Security, and Women's rights, Governance, Emergencies and HIV/Aids. The organisation works in all regions of the country and works in partnership with community based organisations for a more sustainable program approach.

### The Perspectives

### Organisational policy, PMPs & business levels it is performed

A policy is considered to be a guiding document of how things should be done in an organisation. Policy making is considered to consist of the steps to define the working norms e.g. the limits and restrictions in the organisation for consistence purposes. It guides users on how, when and what to do things for continuity purposes. In other words it is a process that is taken to develop a policy. Policy making in Actionaid-Uganda comes from middle management and approved at top management.

### What makes policies to happen in Actionaid-Uganda?

Making of policies is based on problems or presence of gaps within the organisation. For instance, if there is need for consistence, i.e. to do things rightly and maintain uniformity. Stakeholders then evaluate or assess the gap or loopholes. A working environment is then defined i.e. solutions are identified to improve on the working environment.

### Key characteristics of PMPs

The PMP is characterised as a participatory and open process. The parties involved define objectives. The process should be clear to all, and not appear as a one-sided process. It should be specific to the problem to be solved.

#### Key requirements of PMPs

The PMP should involve cross-cutting of staff of different levels that will be affected by the policy in developing it. The process is required to understand fully the strategies, objectives and operations of the organisation. There should be support from the whole organisation especially top management. The process should be driven by relevant information and experts in the subject domain. There is a need to assess the environment in which the organisation is operating for instance the legal framework, regulations in order not to break the laws and rules of the existing country policies. There is a need to know the basic standards of the policy that is being developed i.e. the standards that govern that domain.

#### Key deliverables and qualities of deliverables of PMPs

A key deliverable of the PMP is a policy document. The qualities of this deliverable are that the policy should be driven by top management. There should be an evaluation of the effectiveness of the policy if it is working, i.e. meeting its intended purposes. The policy should be owned by all. The users should have full understanding of the policy and its implications. It should serve for a period of time.

#### Quality of PMPs

The PMP should be fully participatory or one where there is stakeholder involvement. The PMP should be an open process but with a defined period (time framework) in which to develop the policy. The process should have people or stakeholders of different calibre or levels of the organisation. There should be commitment from stakeholders i.e. ownership. The stakeholders should strive at reaching consensus, i.e. getting to a level of understanding to arrive at desired solutions.

#### Type of PMP model followed/used (if any) when designing policies

The organisation follows an iterative model, but it is not so consultative.

### 4.2.2 Analysis of the case study perspectives

The previous paragraphs describe stakeholders' understanding/perspectives on organisational policy making processes. Based on their perspectives, we observed that stakeholders characterised an organisational policy making process as a complex, iterative and participatory process that involves many

stakeholders to come up with steps or procedures to design policies to solve identified problems in an organisation. This observation harmonises with the analysis from literature about PMPs in chapter 1.

We also observed that a key deliverable from organisational PMPs is a policy document that defines the identified problem with its solutions such as policy goals and objectives, policy ownership, guidelines and rules, e.g. compliance/enforcement of how things should be done, etc, clearly articulated.

Furthermore, we observed that stakeholders attached factors such as participatory and consideration of views suggested, openness, shared understanding and consensus, ability to make decisions, and resource-facilitated as key requirements and qualities of the PMP. More so, characteristics such as validity and useful (solve the problem for which it was intended), easy to understand (stakeholders should have full understanding of the policy and its implications), readable, accessible, clarity (should be able to answer any queries that may arise regards the policy), feasible, and possible to implement were observed as key qualities of the PMP deliverable.

Another observation made was that policy making in respective organisations is mainly initiated and done at top management levels, though may also come from middle and operational management depending on the problem at hand. The top-down authority approach characteristic coincides with the observation made about policy making processes in chapter 1.

Thus far, the analysis from the above perspectives was useful for several aspects of this research. Specifically, we used these results as reference knowledge required to identify best practices for improving organisational policy making processes. For instance, we used the results as reference knowledge to identify PMP collaborative concerns from which collaborative needs that can be met by CE were derived (see section below). We also used these results to analyse the quality dimensions for policies from which we derived a theory on good policies. This theory is used to provide a theoretical basis for the CPMP process design as we will see in chapter 5. The deliverable of a process is a major requirement in fulfilling the task analysis of any process design. We therefore used these results to also identify the CPMP task goal, deliverables and requirements for the process as we will see in chapter 6.

## 4.3 PMPs collaborative concerns

Given our definitions of policy making processes (PMPs) as seen in chapter 1 when applying Collaboration Engineering (CE) to better enable such processes with the intention of improving their quality, a number of concerns can be identified. We focus on those concerns that have a collaborative na-

ture, and based on this we argue that a collaborative solution is required. As such, our basic domain model in Figure 1.1 (see chapter 1) was a 'naive' model. Based on the concerns discussed in this section, the next section will refine our basic domain model.

### 4.3.1 Collaborative concerns

Organisational policy processes take a searching, iterative problem solving course. Because of their nature, policy processes have been characterised by complexity. We base on literature in [Flood and Jackson, 1991] to identify two kinds of complexity in policy making. These are multi-participant complexity, and technical complexity. Both types of complexity have distinguished characteristics/concerns. Since one of our study research questions focuses on those concerns/characteristics that have a collaborative nature, this section mainly examines and elaborates on such concerns. We used two sources to examine and identify these concerns: field explorative studies and literature review.

The first source was reviewing of literature on policy making studies. We reviewed literature such as [Riet, 2003, Roelofs, 2000, Sabatier, 1999, Herik, 1998, Eden et al., 1983]. According to Herik [1998] and Eden et al. [1983], what makes policy issues often complex is that issues largely result from mental frameworks of e.g. personal beliefs, attitudes, biases, perceptions, etc. These researchers observed that when there are several actors who play a role in a particular policy issue, finding a common definition is a rather complicated task. Based on their perspective, we analyse that lack of consensus on policy issues among policy makers is a characteristic of complex policy making.

Roelofs [2000] defined the complexity in policy making processes using three dimensions. The first one is cognitive complexity which concerns the level to which an issue involves substantial and/or highly specialised information that is partly difficult to obtain or judge. From this dimension, we understand that policy makers can not easily obtain or sometimes lack technical information to solve policy issues. The second is socio-political complexity where issues are socio-politically complex when they involve many actors who form complex social networks and have many different institutional interests to defend. This dimension in our understanding means that the higher the number of parties involved in a policy making process, the more difficult it may become to align the various perceptions of the issue. More parties could easily mean more different interests. The normative complexity is the last one and it concerns the contention of norms and values which lie behind the various actions and perceptions of policy actors with respect to a complex

issue. Policy actors will develop norms and values which determine how they will deal with policy issues. The way different actors interact, the expectations they have, and their attitude are all determined by the belief systems which are dominant in the organisation or network they are part of.

Sabatier [1999] argued that there are normally hundreds of actors from various interest groups involved in one or more aspects of the process. Each of these actors has potentially different values/interests, perceptions of the situation, and policy preferences. This researcher also noted that the process of policy making usually involves time spans of a decade or more, from emergence of a problem through sufficient experience with implementation to render a reasonably fair evaluation of program impact. In addition, Sabatier [1999] also observed that policy debates among actors typically involve very technical disputes over the severity of a problem, its causes, and the probable impacts of alternative policy solutions. This author argued that understanding the policy process requires attention to the role that such debates play in the overall policy making process.

Using the above researches, we analysed that lack of consensus among policy actors, i.e. finding a common definition on a policy issue in a PMP by several actors is a complicated task. This is due to personal beliefs, attitudes, biases, perceptions [Herik, 1998, Eden et al., 1983]. We also analysed that alignment of various perceptions on the policy issue is difficult. This kind of situation is where many actors are involved in a PMP yet with different values/interests to defend and policy preferences. That is, the more actors involved in a policy process the more complex the problem tends to be, since different actors not only tend to have different interests but also different perceptions of reality. The interests of actors and their perceptions of reality determine their objectives, i.e. the outcomes they want to achieve [Riet, 2003, Roelofs, 2000, Sabatier, 1999, Herik, 1998]. Another analysis made was on the time spans of policy making. We analysed that organising participation in policy procedure is hard and time consuming [Sabatier, 1999, Herik, 1998].

The second source for our analysis of collaborative concerns was from field exploratory studies described in the earlier section of this chapter. This source was used to verify the concerns from the literature above. We start with the presentation of the generalised concerns transcribed from exploratory studies shown in table 4.1.

Using the results from our first source of analysis together with the above analysed generalised concerns shown in table 4.1, we obtained a list of concerns that are of a collaborative nature. We obtained the collaborative concerns first by analysing and abstracting the collaborative aspects from each of the concerns in the reviewed literature and the exploratory studies answers. We then clustered those that were similar to the list shown in table 4.2.

Table 4.1: Table of Generalised Concerns in Policy Making Processes

| No. | Characteristic/concern (based on empirical data) |
|---|---|
| 1 | The buying-in of various stakeholders is difficult, as a result of failing to align individual preferences to group goal |
| 2 | Stakeholders' agenda is for personal objectives, goals and preferences; and not for organisational/institutional needs |
| 3 | There is no structured way of creating policies, for instance, there is no reference to existing information or old policies; getting the responsible stakeholders who start the process to complete is difficult; thus making the process unsuccessful |
| 4 | Lack of and sharing of resources: such as manpower (and even the manpower that exist are not well-trained to perform such tasks; those well-trained are not willing to share expertise); costs are high which affects the policy creation budget such as facilitation of stakeholders; lack of information; even where it exists, stakeholders find it difficult to gather or share the relevant information needed |
| 5 | Big numbers of stakeholders are usually involved in the policy process; most of the time this creates bureaucracy and time delays in the process |
| 6 | Reaching consensus (coming to an agreed position) among parties is intricate |
| 7 | Achieving high-level support, for instance from top management, government (political support) is complicated |
| 8 | Lack of communication; for instance the policies made are not communicated well to the users; lack of awareness of the existing policies; no feedback between stakeholders and users of the policies |
| 9 | Time consuming; getting together stakeholders to perform this process consumes a lot of time; also the activities involved seem to consume much time which makes the process so exhausting |
| 10 | Uncertainty of the possibility of usage of the policy; that is, whether the policy will work, since there is resistance to change; and also getting wide acceptance |
| 11 | Lack of openness from stakeholders involved, especially if the issue being solved is a controversial issue. Sometimes they feel uncomfortable with solutions that may interfere with the status quo of a current state |
| 12 | Lack of commitment from participating stakeholders; which results in lack of ownership |
| 13 | Lack of understanding of the process and its intended outcome, as well as the policy problem, most of the time solving this problem will depend on stakeholders' selected scope and the preferred point of view |
| 14 | Disagreement about the nature of the problem and the desired solutions for the policy (Identifying issues to be addressed by the policy); this is normally caused by a large number of stakeholders involved |

Table 4.2: Summary Table of Abstracted Collaborative Concerns

| **Empirical concern(s)** | **Abstracted collaborative concern** |
|---|---|
| 2, 14 | Conflicting objectives and criteria |
| 1, 6, 11, 14 | Reaching consensus is intricate |
| 4, 13 | Lack of understanding of the policy process |
| 3, 13, 14 | No clear approach to reach an acceptable policy result |
| 5, 9 | Time pressure from organising stakeholder involvement |

### Conflicting objectives and criteria

We combine concern(s) 2 and 14 to derive conflicting objectives and criteria. Policy objectives are often unclear and vaguely formulated. Stakeholders involved may each specify different objectives due to diverse interests and views. These result in conflict. Also the criteria used to select a line of action to take are intricate. Most of the time, there are many and different solutions from different stakeholders. Eventually, the interests of involved stakeholders and their perceptions of reality determine the objectives and criteria, i.e. the outcomes they want to achieve [Roelofs, 2000, Sabatier, 1999, Herik, 1998].

### Reaching consensus is intricate

We derive lack of consensus from combining concern(s) 1, 6, 11, and 14. Lack of consensus in policy making processes arises from conflicting interests and opinions as well as disagreement about the nature of the policy problem and the desired solutions. This largely results from mental frameworks of personal beliefs, attitudes, biases, perceptions, including hidden assumptions and agendas about the whole policy problem by the stakeholders. When there are several actors playing a role in a specific policy issue, getting a common definition is quite a complicated task [Roelofs, 2000, Herik, 1998, Eden et al., 1983]. In other words, aligning stakeholders' individual goals to the group goal to achieve consensus becomes complicated.

### Lack of understanding of the policy process

Lack of understanding of the policy process is derived from concern(s) 4 and 13. Stakeholders or participants involved in the process usually start the pro-

cess to solve policy problems with a lack of understanding and insight into the policy problem elements and their relationships. This is due to unclear boundaries, uncertainty and dynamics of the policy problem elements [Herik, 1998]. These constraints are brought about by stakeholders lacking or having overload, in addition to not sharing the knowledge and right information that they can use to understand relationships between policy problem elements [Koppenjan and Klijn, 2004, Roelofs, 2000]. Failure to have the right information may hamper making decisions [Koppenjan and Klijn, 2004]. At the same time, there are different sources of information and knowledge from various stakeholders. Creating shared resource availability of information and knowledge and this knowledge and information used as a starting point for action are all intricate things to realise [Koppenjan and Klijn, 2004].

#### No clear approach to reach an acceptable policy result

We derive this concern from combining concern(s) 3, 13 and 14. An adequate means to reach a well-substantiated policy result does not exist. Often new approaches are developed to deal with a policy problem at hand. This means, the structure, scope and intensity of interaction among stakeholders will govern the creation and use of information to be able to solve this policy problem [Roelofs, 2000]. The policy process usually involves large numbers of stakeholders. The stakeholders most of the time have varying interests and views. The stakeholders involved, will all influence the process according to their views and interests. This is due to the demand to have a say with regard to the policy problems and potential solutions yet differing in its views and knowledge. Due to high numbers of stakeholders involved, and the degree of variance in their interests and views, the process becomes unpredictable. The unpredictability of the policy process in many cases will cause time pressure [Herik, 1998]. We further elaborate on time pressure concern below.

#### Time pressure from organisation of stakeholder involvement

Time pressure is generated from concern(s) 5 and 9. It stems from the fact that organizing participation in a policy process, since it involves many stakeholders, is hard and time consuming. More so, the nature of policy cycles, which involves organizing a problem through sufficient implementation to render a reasonably fair evaluation of the policy impact, consumes big time spans [Sabatier, 1999]. As a result, most policy processes most of the time turn out to be highly unpredictable [Herik, 1998]. The processes will either take up speed or experience unanticipated delays.

Looking at table 4.1 above, we observe that some concerns e.g. 7, 8, and 10, and others such as culture (norms, values, beliefs), power, etc, are excluded from the PMP collaborative concerns list. Those considered as collaborative concerns were selected based on the CE collaboration scope (see chapter 3). The collaboration scope includes characteristics such as discussing, evaluating, shared understanding, decision making, and consensus building [Vreede and Briggs, 2005, Briggs et al., 2006b, Kolfschoten, 2007] among others. Moreover our research does not aim at addressing factors that may influence the PMP; rather factors that can enable policy stakeholders working together to achieve a group goal. Nevertheless, we acknowledge that there are a myriad of factors that may affect the preparations for a PMP process or the implementation of the PMP outcomes.

To summarise, one of the motivations of this research is to examine and address the concerns that have a collaborative nature in order to improve organisational policy making processes. In this section, we have identified and discussed the collaborative concerns. We observe that these concerns follow from the collaborative nature of the policy creation process activities. These concerns as aforementioned include conflicting objectives and criteria, difficulty in reaching consensus, cognition and lack of sharing of knowledge and information, and time pressure. We use these collaborative concerns to answer the research question 'what are the concerns that are of a collaborative nature in a policy making process?' as seen in chapter 1. Confronted with these collaborative concerns, we argue that a collaborative solution is required. To this end, we need to enhance the collaborative aspects involved in the process design of policy making. In other words, the policy process needs to be made easy, predictable and structured especially for stakeholders involved. Having collaborative concerns implies the need to have a quality collaboration process that can be referred to when making policies. To achieve this, we need to understand the collaborative needs that a collaboration engineer requires in order to design a quality collaborative policy making process. Several collaborative needs can now be formulated that meet the requirements needed to design quality collaboration policy making processes.

### 4.3.2 Understanding the collaborative concerns

The aim of this section is to, given the collaborative concerns from the previous section, refine these to collaborative needs (process requirements) for a collaboration engineer with respect to the policy making process and its context. In table 4.3, we present a summary of the collaborative needs we draw from the aforementioned collaborative concerns.

Table 4.3: Summary Table of Derived Collaborative Needs

| **Collaborative concern** | **Derived collaborative need(s)** |
|---|---|
| Conflicting objectives and criteria | Policy requirements stakeholder accommodation |
| Reaching consensus is intricate | Policy process outcome completeness; Stakeholders' ease of identification of policy elements (with their definitions) |
| Lack of understanding of the policy process | Understanding of the policy process |
| No clear approach to reach an acceptable policy result | Structured policy problem solving approach |
| Time pressure from organisation of stakeholder involvement | Policy process efficiency |

- **Policy requirements stakeholder accommodation** – various stakeholders approach solving the policy problem with diverse views and interests. Thus, there is a need for a collaborative policy process that can accommodate stakeholders' divergent and desired views and interests (policy preferences). In other words, the process should permit stakeholders to contribute and the contributions taken into account in policy requirements negotiation. This process should provide mechanisms for arriving (reach consensus) at satisfactory policy requirements without necessarily conflicting and compromising overall policy objectives. The process should enable stakeholders to align their diverse and changing views and opinions.

- **Understanding of the policy process** – there is a need for a collaborative policy process that is not complex but enables stakeholders to have collective understanding of relationships between policy problem elements so as to achieve conformity in decision-making. That is, the stakeholders need a good understanding of how to use the collaborative policy process to attain their goal. This process should permit stakeholders to have knowledge of the goals and perceptions of this process in order to derive satisfactory results.

- **Policy process outcome completeness** – there is a need for a collaborative PMP that enables creation of resource shared availability for

right information and knowledge, and this information and knowledge used as a basis for action by stakeholders. Well-organised knowledge and information can facilitate stakeholders' decision-making process, thus enabling fulfilment of the aspects of the policy process outcomes.

- **Policy process efficiency** – since policy making involves mobilisation of many resources, there is a need for a collaborative policy process in which stakeholders can spend less resources such as time, costs, effort, and physical resources for attainment of the policy process goal.

- **Structured policy problem solving approach** – there is a need for a collaborative policy process that provides a methodical approach to policy development. In other words, there is a need for a structured recurring collaborative policy process that can be referred to by stakeholders each time they need to solve recurring policy problems.

- **Stakeholders' ease of identification of policy elements** (with their definitions) – there is a need for a collaborative policy process that enables stakeholders to easily identify, have a collective understanding, and consensus of the policy elements (and their definitions). By 'policy elements' we mean decisions made by the policy stakeholders that authorise or give direction and content to organisational policy actions [Anderson, 2003].

## 4.4 CE potential for policy making processes

Using the collaborative needs/process requirements formulated above, organisations and their stakeholders need to have a structured collaboration process. That is, a well-defined process specification with several choices depending on the context/situation in which a policy needs to be specified that is referred to when making policies. As such, and as described in chapter 3, we look at CE as an approach that can provide improvement in the quality of collaboration for a recurring mission critical task (in our case collaborative policy making) in the organisation. In this section we discuss how CE can be used in several ways to provide for collaborative needs.

### 4.4.1 Meeting collaborative needs with CE

From the aforementioned formulated collaborative needs/process requirements, we discuss for each of these how they can be met by CE. We use the theorised benefits of CE described in the previous chapter to meet these

collaborative needs. Table 4.4 presents a summary of CE benefits to collaborative needs. The outcome of this table illustrates the potential of CE to support improving organisational policy making processes.

Table 4.4: Summary Table of CE Benefits to Collaborative Needs

| **Collaborative need** | **CE theorised benefit** |
|---|---|
| Policy requirements stakeholder accommodation | ThinkLets' built-in rules enable group/team execution of a collaboration process. In other words, thinkLets permit representation of all participants in all collaborative activities |
| Policy process outcome completeness | The patterns of collaboration 'clarify', 'evaluate' and 'consensus building' offer thinkLets support that enable availability of a shared base for information and knowledge usage |
| Stakeholders' ease of identification of policy elements (with their definitions) | The patterns of collaboration 'clarify' and 'consensus building' offer thinkLets support to enable joint development, shared understanding, shared meaning and context, and consensus |
| Understanding of the policy process | ThinkLets provide a group/team with explicit detail of how to conduct a collaboration process |
| Structured policy problem solving approach | CE is an approach to designing recurring collaboration processes using given patterns of collaboration and thinkLets |
| Policy process efficiency | Group collaboration facilitates optimal usage of available resources to enable attainment of a group goal |

### Policy requirements stakeholder accommodation

Concerning policy requirements stakeholder accommodation, the thinkLets tool found in the CE approach can be used to support the accommodation of stakeholders' divergent and desired views and interests (stakes). In other words, in CE, execution of collaborative processes permits representation of all the stakeholders in collaborative problem-solving activities by usage of thinkLets [Kolfschoten et al., 2004]. Most thinkLets have built-in rules like in Group Support Systems (GSS), (see [Briggs et al., 2003]) to ensure equal participation of stakeholders. With equal participation, stakeholders will feel that their ideas are considered during requirements negotiation. This can encourage stakeholder interdependency, team bonding, consensus on decisions, acceptance and support for the policy process results.

### Understanding of the policy process

As seen in the preceding paragraph, collaboration engineers use building blocks known as thinkLets when designing repeatable collaboration processes. These thinkLets can be used to support stakeholders' understanding of the

policy process. They do this by easing communication through explicitly detailing how a group of stakeholders can conduct a recurring collaboration policy process [Briggs et al., 2003]. The thinkLets also enable understanding of the process through creating particular dynamism within groups of stakeholders [Vreede et al., 2006]. In other words, the use of thinkLets enables dynamism and flexibility of rules and procedures in process tasks execution. This enables policy stakeholders to execute the collaboration policy process with ease thus making it easily understandable. As such, there is an expected improvement in productivity of and quality of work life for policy stakeholders through enabling rapid development of policies.

### Policy process efficiency

Regards policy process efficiency, there is a need for a collaborative process in which policy making stakeholders can spend less resources such as time, effort, costs and physical resources for the attainment of the policy process goal than without the use of a collaborative approach. With collaboration, groups tend to minimise/save on the amount of resources required to attain a goal [Briggs et al., 2003]. To this end, the CE approach offers a model and guidelines (see [Kolfschoten and Vreede, 2007]) to achieve a balance between efficiency and effectiveness of the process design. In other words, the collaboration process design must make optimal usage of the available resources. For instance, in terms of costs savings, CE enables organisational stakeholders to obtain recurring revenue and reduce on training investment from a single design of a collaborative policy process.

### Structured policy problem solving approach

CE can be used to add on existing approaches to better the structured policy problem solving approach. In other words, CE can be used to provide for a methodical approach to policy development. The methodical approach can be obtained from a structured recurring collaborative policy process. This structured recurring process can be referred to by stakeholders each time they need to solve policy problems. CE is an approach to designing recurring collaboration processes. Collaboration engineers design recurring collaboration processes once [Vreede and Briggs, 2005]. Once a single design of a recurring collaborative policy making process is in place, it will benefit organisations in several ways.

Firstly, creating a policy is a searching, iterative and a frequently performed problem-solving collaborative task. This may require external support from professional policy developers/facilitators. External professional

policy developers/facilitators are commonly found to be expensive and scarce. CE therefore seeks to bring the value of facilitated interventions to people who do not have access to facilitation [Briggs et al., 2003]. This means, a collaboration engineer designs a repeatable collaborative policy making process once which can then be carried out/executed by stakeholders involved in the process without additional support.

Secondly, CE focuses on recurring processes rather than ad hoc processes. That is, when a repeated collaborative policy process design is improved, an organisation will derive benefit from the improvement again and again. While with ad hoc processes, the value of each process improvement will accrue only once [Vreede and Briggs, 2005]. Again, with the improvement of repeatable collaborative policy processes, practitioners of these processes can learn to conduct them successfully without learning facilitation skills [Vreede and Briggs, 2005]. This also means that policy making stakeholders do not have to spend on professional facilitators to conduct such processes.

Thirdly, the designs of recurring collaborative policy processes will create intellectual capital for organisations [Vreede and Briggs, 2005]. In other words, with the improvement to repeatable processes, the same collaborative policy process could be applied successfully in each policy developing workshop with different groups of policy stakeholders and focusing on different collaborative policy developing tasks. More so, the same collaborative process can be used to develop different types of policy models.

#### Stakeholders' ease of identification of policy elements

CE can be used to enable stakeholders to easily identify, have a collective understanding, and consensus of the policy elements (and their definitions). In CE, the patterns of collaboration 'clarify' and 'consensus building' offer thinkLets support [Briggs et al., 2006b] that can enable stakeholders have a common/shared understanding, commitment and consensus of policy elements identified. This means, during collaborative policy process execution, policy stakeholders have the opportunity to perform the tasks collaboratively by support of these collaboration patterns and the respective thinkLets.

#### Policy process outcome completeness

The CE patterns of collaboration as described in the preceding paragraph in addition to the 'evaluate' pattern offer thinkLets support that can be used to support the completeness of policy process outcomes. These patterns can provide for creation of a shared base for information and knowledge that can be used as a basis for shared decision-making. Shared decision-making

will enable stakeholders have shared consensus, more so create support for desired policy process outcomes.

## 4.5 Conclusions about CE potential to PMPs

Before we conclude the CE potentiality to PMPs, it is important for us to take note of a new entrant to the list of CPMP process requirements, and the removal of one requirement from this list mentioned in the preceding section. These are 'effectiveness of the policy process' and 'structured policy problem solving approach', respectively. We introduce the former because; success of a policy collaboration process very much depends on its effectiveness. That is, effectiveness of the policy collaboration process is determined by process results meeting the earlier mentioned process requirements. This forms the basis of policy process effectiveness process requirement. We have left out the latter because; one way of improving organisational policy making is to provide a methodical approach. This is the very methodical approach in terms of a recurring collaboration process that should be in place in order to enable attainment of other process requirements. In other words attainment of other process requirements depends on the presence of a structured policy collaboration process.

From the discussions in this chapter, we acknowledge that some attempts have been made to support policy making processes. Even though each of these attempts has its own advantages, some areas in PMPs still remain to be worked on as seen in earlier sections. An analysis is done in PMPs in which we identify concerns that are of a collaborative nature. We choose to apply the CE approach in addition to the existing approaches to enable addressing these collaborative needs. As such, the outcomes of CE benefits to PMPs illustrate that CE indeed has the potential to support improving organisational policy making. Thus far, though CE can be useful for enhancing collaborative policy making processes, it still needs a theoretical basis to guide the process design. In other words, to improve collaborative policy making and the resulting policies, we need to understand the actual design choices that should be considered to design a quality process design. Understanding of the design choices requires first to understand what makes good policies. The basis of understanding what makes good policies is provided by the quality dimensions and the causal theory. In chapter 5, we proceed to understand the theoretical basis that is needed to guide the designing of a quality collaborative policy making process design.

# Chapter 5

# Quality in Organisational Policy Making

The aim of this research is to improve the quality of organisational policy making processes and the resulting policies. Based on its benefits to organisational policy making (see chapter 4), we argue that CE is an approach that can be useful in improving these processes and the policies made. However, the CE approach requires a theoretical basis to direct the designing of a quality process design. We assume that a quality process design if used as prescribed, it can enable improvement of the quality of organisational policy making processes and the resulting policies. In order to design a quality policy making process design, it requires us to first understand what makes good policies from a collaborative policy making effort. We suggest that first focusing analysis on the quality dimensions that define a good policy will enable us to determine the design choices that should guide the designing of a quality collaborative policy making process design.

Using discussions in [Nabukenya et al., 2009], we first explore the concept of quality as perceived in other domain fields. We also consider related work to quality in policy processes. The analysis from this exploration leads us to the discussion of the quality dimensions for a good policy. The quality dimensions are analysed from both the field exploratory studies and literature on the policy making domain. An explanation of the relationship between these quality dimensions leading to a good policy is what the theory is. We conclude this chapter with the design choices for designing a quality collaborative policy making process design. These design choices are obtained from the theory on good policy.

## 5.1 Exploration of the quality concept

The notion of quality is described in various literatures and tailored to specific application fields. Such application fields among others include Operations Management in which the key dimensions of quality are product performance, service characteristics, warranty, service availability and total price [Harrison, 1996]. In the Software Engineering perspective, the quality of a software system can be assessed in terms of quality attributes e.g. safety, security, reliability, resilience, robustness, learn-ability, etc [Sommerville, 1989]. Further, software quality management can be structured into 3 principle activities i.e. quality assurance, quality control, and quality planning [Sommerville, 1989].

The Management perspective looks at quality in two ways. First, that quality is conformance to the engineering specification of what the product or service should be. Secondly, that quality is customer satisfaction and that quality can be measured only in terms of the customer's perception. To align the two, Total Quality Management (TQM) is a business strategy that is followed to describe quality. TQM is based on three general principles: *i).* customer focus – thinking of business processes as ways to satisfy customers by meeting their stated or unstated expectations); *ii).* process improvement – continuous improvement of processes...never being satisfied; always looking for ways to do the work better and produce better outputs; and *iii).* total involvement – this requires attention and commitment from everyone in the firm. In other words, the idea of TQM is to identify, analyse, and improve the processes that directly or indirectly create value for the customer [Alter, 1996, Robbins et al., 1997].

In addition to the above perspectives of the quality concept, this research study aims at improving organisational policy making processes and resulting policies using the Collaboration Engineering (CE) approach. It is therefore, imperative to also consider the policy studies and group support quality perspectives. In terms of Policy Analysis studies, the quality perspective we describe is on inter-organisational policy making. Some evaluation frameworks for successful policy processes are discussed in [Herik, 1998]. Based on these frameworks, insights are drawn to describe the criteria that quality policy meetings should be measured against. We use the lessons from [Herik, 1998] to describe these quality criteria. The first ones look at policy process criteria where participation of policy stakeholders and problem solving process characteristics such as cost and methodology should be measured. The second one is on policy outcome criteria in which the objective of the policy study or theory, the satisfaction of participants with the outcomes achieved as well as the policy solution fitting the questions posed should be measured. The third is on policy impact and success criteria in which the usage of the

policy support by the policy makers and the success of the policy in solving the policy problems should be measured.

In the context of Group support, quality of group supported meetings is based on the outcome and process variables (see e.g. [Vreede and Muller, 1997, Pinsonneault and Kramer, 1990]). Consensus behaviour, group divergence or convergence in opinions, and commitment development, among others are process variables that can be used to explain yielding meeting outcomes such as problem owner and participant satisfaction. More so, participants' satisfaction in addition to tangible outcomes evaluation can be used as a vital indicator for supported meeting success. With respect to group support for policy making meetings, Herik [1998] describes their quality based on the problem owner and the participants' perspectives. That is, the satisfaction with the meeting process and meeting outcomes is based on the expression of the problem owner and participants. In addition, the expression of the problem owner and participants determines whether the GSS has added value to supporting meetings, and if there is positive impact on the policy process.

Based on the analysis from the discussion above, we can say that the concept of quality is context dependent. With respect to policy analysis and group supported policy process meetings perspectives on quality, we observe and acknowledge that research has been done on quality in the policy making domain. Notwithstanding their contributions, the respective policy evaluation frameworks do not specifically look at ways of conducting a successful (quality) collaborative policy making process effort. Furthermore, these frameworks do not offer concrete guidelines on exactly how to design a quality collaborative policy making process design that can be evaluated to derive a quality collaborative policy process and quality policies. In this research, our interest lies in providing a theory that can aid (support) in improving the quality of a collaborative policy making process and the resulting policies. However, to better understand this, we first need to better understand the quality of the artefact that is produced, i.e. the collaborative policy process design and how it can be operationalised.

The collaboration process design's intention is considering, predicting and anticipating any occurrence in the collaboration process for continuous improvement in the quality of the collaboration process [Nunamaker et al., 1997, Clawson and Bostrom, 1995]. This means that, if executed as intended, the creation of a successful collaboration process depends on a high quality collaboration process design [Vreede and Briggs, 2005]. Thus, in the CE approach, when measuring the quality of CE effort, a distinction is made between the design object (collaboration process) and the design process [Vreede and Briggs, 2005].

According to Kolfschoten [2007], the quality of a collaboration process design for CE can be defined as 'the degree to which the collaboration engineering design supports a practitioner to support the group in achieving its goal'. In their research, the quality dimensions for both collaboration and the collaboration process design for CE are discussed. The quality dimensions for collaboration include effectiveness, efficiency, productivity, commitment of resources and satisfaction. The quality dimensions for a collaboration process design for CE are efficaciousness, acceptance, transferability and reusability. For a comprehensive discussion on quality in collaboration and quality of a collaboration process design for CE, see [Kolfschoten, 2007].

As seen in the preceding paragraph, we need to understand the quality of the collaborative PMP design. More so, we mentioned the quality dimensions for a collaboration process design for CE discussed in Kolfschoten [2007]. However, these quality dimensions are more generalised, i.e. are not specific or complete to a particular domain/context. In that case, a collaboration engineer may identify domain-specific indicators for a particular collaboration process. Additionally, indicators based on a particular phenomenon may be added depending on the phenomenon of interest that the collaboration engineer is designing for [Vreede and Briggs, 2005]. Moreover, in different situations, different indicators may be more or less significant to determine the quality of the CE process. The variation in significance for instance, may depend on the context for which a collaboration process is designed and therefore being used [Vreede and Briggs, 2005]; other times, the indicators could be relevant to all processes irrespective of the context.

To this end, we need to identify the domain-specific quality dimensions in addition to the generic indicators for a quality collaborative policy making process design. To be able to identify these quality dimensions, we need to first understand what makes good policies. The understanding of what makes good policies is based on the quality dimensions and their relationships. To determine the quality dimensions of a good policy therefore, we did an analysis on the field of policy making. We used both field exploratory studies and reviewed literature as sources of the analysis (see chapter 4). In addition, we also use insights from various researches such as [Veld, 1987, Locke and Latham, 1990, Nunamaker et al., 2001, Kolfschoten, 2007] to discuss these dimensions. An explanation of the relationship between these quality dimensions leading to a good policy is what the theory is. The analysis from this theory can be used to operationalise the quality dimensions of a good policy and to also determine the design choices that can be used to guide the designing of a quality collaborative policy process design. In chapter 6, we evaluate this quality process design to check if indeed it improves the collaborative policy making process and the resulting policies.

## 5.2 Quality of policies

An approach to analyse the quality dimensions of a good policy is to look at the reference knowledge in the policy making field. The first source we used for this analysis was reviewing of literature on policy making science. We used research resources from Herik [1998], Sabatier [1999], Riet [2003], Koppenjan and Klijn [2004], and Buuren et al. [2004]. In their research, policy making and decision-making are characterised as complex settings with multi-actor stakeholders, each stakeholder with varying and diverging opinions and views and a variety of individual collected information. Most of these researchers observed that it was not always clear or obvious how to realise a policy goal, even when there was a high level of agreement about a desired direction. From this analysis, we observed that most researchers suggested mutual agreement and acceptance of the policy results as dimensions of a good policy.

Koppenjan and Klijn [2004] and Buuren et al. [2004] argued that achieving acceptance is based on stakeholders sharing and using the relevant and right information and knowledge to guide policy making. They suggested that when there is availability and collective usage of information, the stakeholders/actors are stimulated to share their knowledge and information. This can enable avoidance of situations where each of the actors is collecting its own information based on different parameters [Buuren et al., 2004]. Herik [1998], Sabatier [1999], and Riet [2003] suggested the involvement of actors in the process of policy creation so that they can feel that their various stakes are contributing to the policy being developed. In other words, the involvement of stakeholders in the policy making process can enable their stakes to be taken into account. From their research, we analyse that if such aspects are considered in the policy making process, this is likely to reduce on the disagreement about the policy goal and conflicts among the actors. Thus, this can enable mutual agreement and acceptance of policy results by the stakeholders.

Another dimension that was commonly suggested was on achieving consensus. Herik [1998], Sabatier [1999], Koppenjan and Klijn [2004], and Buuren et al. [2004] suggested shared understanding and meanings of policy aspects to enable decision-making and consensus. Sabatier [1999] and Koppenjan and Klijn [2004] argued that differences in understanding between actors will often be responsible for cognitive blockages in decision-making. From our analysis, the dimensions suggested mostly by these researchers were on the policy results being useful, well understood, and acceptable by stakeholders and decision-makers.

To substantiate the abovementioned dimensions, we did a second analysis.

This analysis was on the field explorative studies explained in chapter 4. As part of the interviews, we asked stakeholders what they considered as the key qualities of policies and qualities of policy making processes. The answers were analysed to obtain the quality dimensions for good policies. We did the analysis by identifying aspects that were mentioned several times. We then clustered those that were similar leading to a condensed list of dimensions. Using this list, stakeholders understood a quality policy to be:

- Useful i.e. one that meets the importance or need it is meant for. Some stakeholders referred to a useful policy as one that is consumable
- Valid i.e. meet its intended purposes in terms of achieving the policy goal and objectives to avoid discrepancies and encumbrances
- With fewer or none complaints from users
- Accessible and known to the users
- Technically neutral, i.e., negotiable and flexible that it does not tie to a few peoples' suggestions (openness)
- Realistic and feasible
- Participatory
- Owned by all
- Accepted by all
- Consultative i.e. quality of data and information used, expertise of persons involved to produce the policy
- Consensus-based
- Considers peoples' views suggested to be useful to the policy
- Agreed-on
- Easy to understand i.e. policy and its aspects
- Mutual understanding and meaning of the policy context
- Decision-made to address the intention it was meant for
- Clear i.e. should be able to answer any queries that may arise regards the policy

From this analysis we observed that dimensions on ease of understanding, shared understanding, useful, peoples' opinions and views contributing to the usefulness of the policy, acceptance, consensus-based, agreement, and accessibility were mentioned quite a lot. We also observed that some dimensions are specific versions of others such as usefulness, validity, agreement, acceptance, decision-made and consensus-based can be considered as indicators to effectiveness of the policy. Consideration of opinions suggested being useful, participatory and openness can work as indicators for acceptance of the policy results. We feel that validity, readable, clear and relevant can be considered as indicators to completeness of the policy. Easy to understand, mutual understanding and meaning, clarity, consensus-based can be considered as indicators of shared understanding and meaning of policy elements and the policy result.

## 5.3 Quality dimensions for policies

Given the quality dimensions from our analysis, the next step is to define and to further understand each of these dimensions based on the above analysis. When we understand the quality dimensions, we analyse this understanding to derive a theory on what makes good policies, i.e a theory that defines how stakeholders come to a good policy. To visualise the quality dimensions, we use a box-arrow-oval model notation. The oval represents a quality dimension; the box represents a condition; and the arrows point from the conditions on which the quality dimension depends. In Table 5.1, we give a summary of the quality dimensions and respective conditions.

Table 5.1: Summary Table of Quality Dimensions and Conditions

| **Quality dimension** | **Condition(s)** |
|---|---|
| Policy acceptance | Stakes accommodation; Stakeholder involvement |
| Policy completeness | Intended, Actual, Expected knowledge and information availability |
| Shared understanding of policy elements | Clarity & understanding of policy elements, Actual, Expected policy intentions |
| Policy effectiveness | Intended, Real, Expected result |

### 5.3.1 Policy acceptance

One of the most important ways of arriving at a good policy is when the policy result is accepted by all stakeholders involved in the PMP. Based on the analysis in the earlier section, we argue that acceptance of a policy result is likely to be achieved when stakes suggested by involved stakeholders in the process are considered. In other words, a requirement for acceptance of the policy result is that stakes are accommodated. Stakes accommodation depends on involvement of stakeholders in policy making and decision-making Bruijn and Heuvelhof [2008], Riet [2003], Herik [1998], Sabatier [1999]. However, we feel that just mere stakeholder involvement is not enough; but that the right and relevant stakeholders and that these stakeholders can speak (open) to represent organisational interests in policy making can be more sufficient in achieving a good policy. When stakes are accommodated, the involved stakeholders are likely to have an interest in the policy result. Having an interest in the policy result can make stakeholders to find the policy result useful to them and that they can easily use it. Finding the policy result useful and easy to use are likely to affect the acceptance of the policy result by the stakeholders in a positive way. This is in line with what Venkatesh et al. [2003] and Davis et al. [1989] describe about acceptance. These researchers argue that when people used technology and found it useful and easy to use; this would facilitate their acceptance of the technology. We therefore define acceptance as the *reflection of involved stakeholders' stakes satisfactorily in the policy result to achieve the policy goal.*

This means that to enable acceptance of the policy result, stakeholders should be able to participate/be involved. Then the involved stakeholders should be able to contribute and their contributions (stakes) taken into account. The stakes taken into account should be mirrored in the policy result; but at the same time, without necessarily conflicting and compromising the overall policy goal and objectives. In Figure 5.1, we use the box-arrow-oval model to illustrate the conditions to acceptance quality dimensions.

The oval represents a quality dimension; the box represents a condition; and the arrows point from the conditions on which the quality dimension depends. In figure 5.1, the top oval depicts the acceptance quality dimension and that this dimension is dependent on two conditions. The conditions are involvement of stakeholders and their stakes being accommodated. The lower oval depicts the policy goal achievement enabled by acceptance of policy results. It shows that if stakeholders involved in the process can contribute and their stakes sufficiently accommodated, then there is a possibility that the policy result will be accepted or taken seriously by policy stakeholders and decision-makers. When the policy result is accepted, it can enable

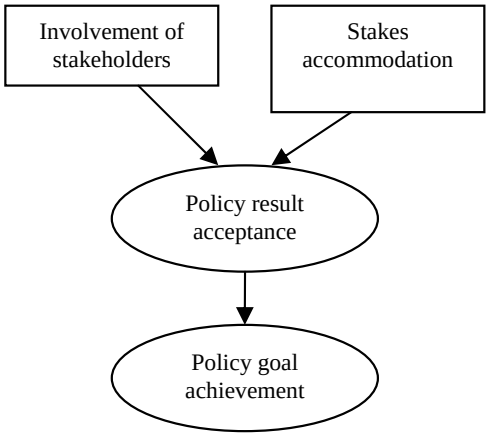



Figure 5.1: Acceptance quality dimension

achievement of the policy goal.

To manipulate acceptance of the policy result, stakes need to be adequately accommodated. To achieve this, we need to involve more or less, right and relevant stakeholders that can be able to speak and represent organisational interests [Bruijn and Heuvelhof, 2008, Marleen, 2006, Sabatier, 1999]. The involvement of the right and relevant stakeholders in the PMP is likely to stimulate more and specific resources such as knowledge and expertise Koppenjan and Klijn [2004] needed to achieve the policy goal. Also the involvement of stakeholders can lead to support for and acceptance [Venkatesh et al., 2003, Briggs et al., 1999, Davis et al., 1989] of the policy outcomes and decisions taken. Support for and acceptance of policy results can build stakeholder interdependency [Bruijn and Heuvelhof, 2008, Marleen, 2006].

### 5.3.2 Policy completeness

A good policy is one that is complete. This means that completeness of the policy is another important indicator of a good policy. To be able to complete the policy, stakeholders need to have resources in terms of information and knowledge and this information and knowledge used as a basis for action. Availability of right and relevant knowledge and information and these resources interactively used can enable stakeholders to complete the policy [Briggs, 1994]. Completing the policy can lead to achievement of the policy goal. Briggs [1994] argues that resources should be interactively used and focused towards achieving a goal. We therefore define completeness of policy quality dimension as *the fulfilment of each of the policy aspects using right*

*and relevant information and knowledge and that these aspects address the policy goal.*

This means that for a policy to be complete, each of its aspects should be filled with the right information. This information should be guided by right and relevant knowledge from involved stakeholders as depicted in figure 2. By 'policy aspects' we mean everything that is entailed in the policy such as policy goal, policy objectives, elements and their implications. When a policy is complete, it can enable attainment of the policy goal as shown in figure 5.2.

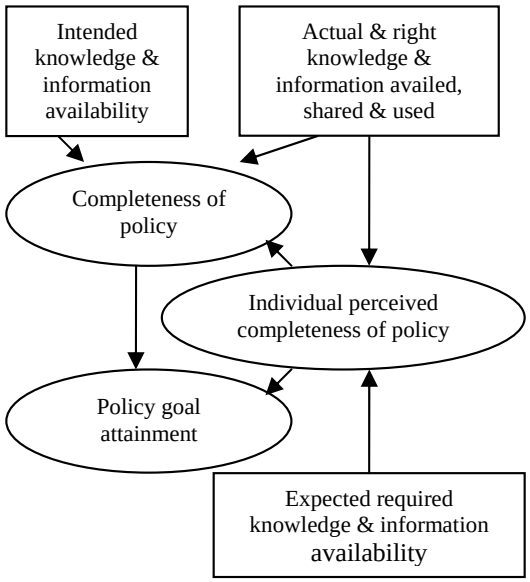



Figure 5.2: Completeness quality dimension

To take care of completeness of the policy, availability of knowledge and information resources should be considered [Briggs, 1994]. But at the same time, this information and knowledge should be right and relevant to the policy in question. This means that the stakeholders should understand and be guided by this right and relevant knowledge and information in filling all the policy aspects. This is illustrated in the upper left and right boxes of figure 5.2. We use Nunamaker et al. [2001]' intellectual bandwidth model to explain the availability of knowledge and information. Availability of information means that policy stakeholders have an understanding of the issues involved in or related with the policy to be developed, and its context. Availability of knowledge means that the policy stakeholders have an understanding of the relationships amongst the policy data they have collected to use to develop a policy. In order to develop a policy, stakeholders have

to be able to make sense of (understand) what information they exchange [Nunamaker et al., 2001]. However, stakeholders with more information may not always use it to support their ideas. This is because the stakeholders may not notice the utility they may get from the policy goal [Briggs et al., 2006a]. If policy stakeholders involved in the process do not understand or have the required knowledge and relevant information resources [Briggs, 1994] on the policy domain in question; this is likely to affect the fulfilment of the policy aspects. This can affect the achievement of the policy goal. Also if stakeholders choose not to avail and share their information and knowledge resources, this can affect the completeness of the policy; thus likely to affect achievement of the policy goal [Briggs, 1994].

Addressing this factor would require the willingness from the stakeholders to avail, share and use their resources with others. To manipulate this willingness, we adopt the instrumentality theory of Briggs et al. [2006a, 2005]. Using this theory, for involved stakeholders to be willing to avail, share and certainly use this information and knowledge to complete a policy, they should expect the policy goal to be instrumental to them and that they will make use of this policy goal [Briggs et al., 2006a, 2005]. This means that the policy goal should provide the stakeholders some individual utility [Briggs et al., 2006a]. When stakeholders are willing to avail, share and use their resources towards achieving their goal, it can enable fulfilment of the policy aspects (completeness of the policy), thus can enable achievement of the policy goal.

Despite aiming at producing a complete policy result as a group, different stakeholders will always have varying perceptions of this completeness. For instance, one stakeholder's perception on completeness may vary from another. We therefore include the individual perceived completeness of policy as a quality dimension that also influences policy completeness as seen via the second oval notation in figure 5.2. To decrease the variations in intentions specified and individual completeness perceptions, we can increase the levels of specific required knowledge and relevant information resources [Briggs, 1994] in the process design as seen in the lower box of figure 5.2.

### 5.3.3 Policy Effectiveness

Effectiveness is a generic indicator of success of any product or process. In our case we use effectiveness of a policy result to mean a useful and valid policy. By usefulness and validity we mean a policy that actually articulates the right solutions to address the pre-defined policy problem. This makes effectiveness a very vital indicator of a good policy. Effectiveness of a policy goal is indicated in such a way that stakeholders involved in policy making achieve their policy goal and that the results of the policy articulate solutions

or address the pre-defined stated policy problem [Locke and Latham, 1990]. Based on this understanding and to have a more general definition, we borrow the definition of In't Veld Veld [1987] to define effectiveness as *the real result compared to the intended result, specified in the design.* This means that for a policy to be effective, the real result of the policy should actually meet its intentions. In other words, the real result (the policy solutions) should address the pre-defined policy problem (intended).

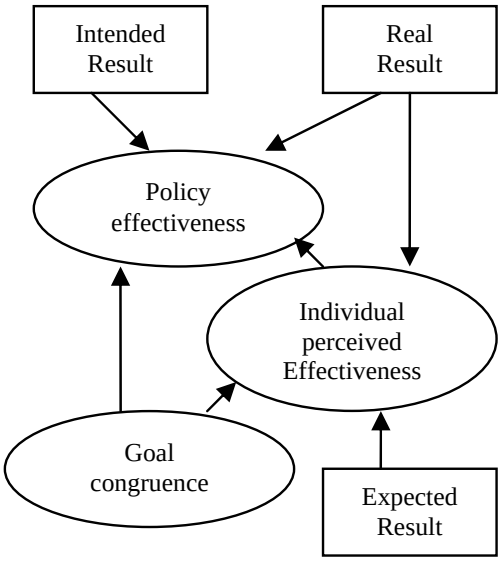



Figure 5.3: Effectiveness quality dimension

Goal congruence is another dimension that influences policy effectiveness. By goal congruence we mean that when the individual goals and stakes accommodated are compatible with the group goal, there can be a chance of attaining the policy goal [Briggs, 1994].

However, much as stakeholders specify the intended result, each stakeholder may have varying perceptions and interests. This means, different policy stakeholders can have different perceptions on the effectiveness of the policy based on their expectation and the way they value the results of the group effort as illustrated in figure 5.3. To decrease these variations (perceived effectiveness and policy intentions specified), there would be need to increase the level of detail of the goal specification [Locke and Latham, 1990]. Locke and Latham [1990] argue that the more specific the shared requirements to the results, the more focused and specific the group effort.

### 5.3.4 Shared understanding of policy elements

Stakeholders' shared understanding of policy elements is a quality dimension that can enable ease of understanding of the policy. By 'policy elements' we mean stated actions or rules that guide behaviour according to the policy goals; and these elements may also be prescribed exceptions in rules to meet/guard conflicting stakes. In order to have policy elements that reflect the intentions of the policy, shared meaning and shared understanding of these elements by the involved stakeholders is necessary. When stakeholders have mutual meanings and understandings of the policy elements, it is likely to lead to their conformity to and understanding of the policy as depicted in figure 5.4.

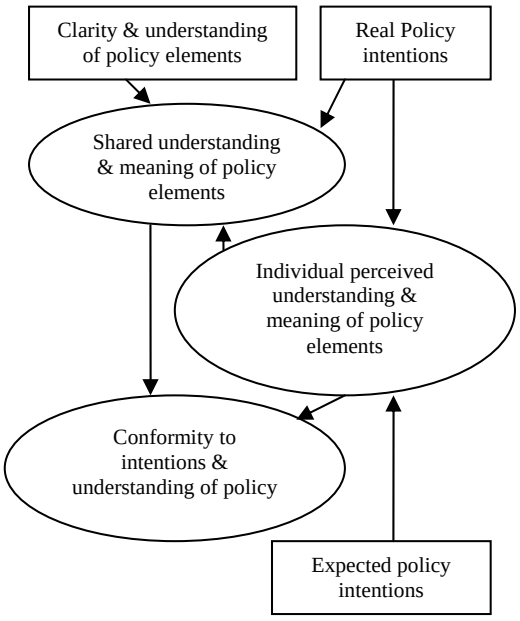



Figure 5.4: Shared understanding quality dimension

Conformity to and understanding of the policy can enable stakeholders to easily use the policy [Davis et al., 1989]. We therefore define shared understanding of policy elements as *the collective understandings and meaning of relationships between policy elements to articulate intended behaviour so as to achieve conformity to intentions and understanding of the policy.*

Shared understanding depends on clarity and understanding of the policy elements by involved stakeholders. In other words, the involved stakeholders need to collectively understand why these policy elements are relevant for the intentions of the policy. In the communication theory, clarity and understanding are among the various parameters used to perceive communi-

cation [Craig, 1999]. Using these perspectives, we will describe clarity and understanding of policy elements to mean stakeholders' ability to communicate the intended behaviour as intended in the policy goal. Considering clarity and understanding of policy elements to mean communicating intended behaviour, necessitates us to define what we mean by communication. Communication is explained extensively in different models proposed in the communication theory. However, we explain communication using the transmission model based on the argument by Craig [1999]. Craig [1999] argues that the transmission model is a useful model to scrutinise communication as an intentional act carried out in order to achieve some anticipated outcome.

At the same time, individual stakeholders also have their own perceived understanding and meaning of policy elements. This is likely to influence their ability to mutually understand the policy elements and thus likely to affect their conformity levels of the policy intentions as seen in figure 5.4. A degree of disparity and divergence in the clarity and understanding of the policy elements is likely to cause disagreement among the involved stakeholders[Briggs et al., 2005]. This can reduce their level of shared understanding and meaning. Like wise, a low level of shared understanding and meaning of the policy elements is likely to reduce the conformity to policy intentions and understanding of the policy. To decrease these variations, we would need to increase the level of detail of the policy intentions (policy goal) [Locke and Latham, 1990] to enable the reflection of what should entail policy elements.

In the next section, we use a causal model to explain and discuss the relationships among the quality dimensions. The model outcome gives us a theory that should enable us to understand how to realise a good policy.

## 5.4 Theory on good policy

Given the above models figures 5.1 – 5.4 explaining the quality dimensions, we observe that there exist many relations towards accomplishment of the policy goal. For instance, we observe that shared understanding and conformity to intentions of the policy can enable attainment of group policy goal. Also, if the group goal matches with individual goals, then a group policy goal can be achieved. Based on these observations we need to understand what causes a good policy and how do these dimensions relate towards achieving a good policy. To explain these relationships, we use a causal model shown in figure 5.5. The model is visualised by the usage of an oval-and-arrow notation. The direction of the arrow indicates the direction of causation, and the plus (+) and minus (-) signs on the arrows indicate positive and negative relationships.

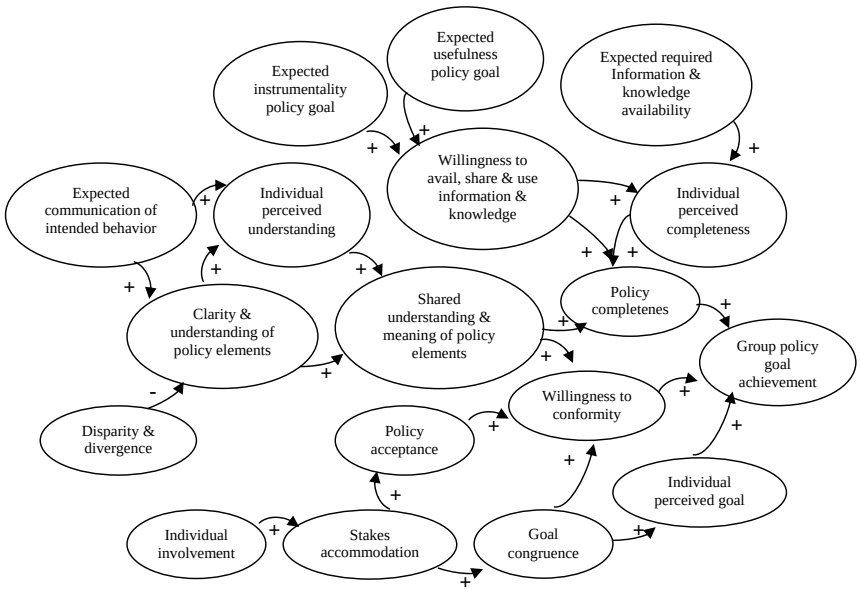



Figure 5.5: Theory on good policy

In this model i.e. figure 5.5, the final result is the attainment of the policy goal. In other words, the relationship among the constructs is towards achieving the policy goal. A good policy can be achieved if stakeholders have conformity to the intentions of the policy. In other words, the conformity to intentions of the policy is likely to cause achievement of the policy goal. But again, this relation is not obvious. If stakeholders are not willing to conform to the policy intentions, this is likely to lead to the ineffectiveness and thus a lower degree of the policy goal achievement. One of the conditions to the relation between the conformity and the achievement of the policy goal is what we call goal congruence; the degree to which the group goal is compatible with the individual's private goal [Briggs, 1994]. To make and get better this condition, we need to make sure that the individual stakes are accommodated or mirrored in the policy. To manipulate stakes accommodation, we need to involve individual stakeholders. When stakeholders are involved and their stakes accommodated, it is likely to enable conformity to the policy intentions. When the accommodated stakes and individual goals are compatible with the group goal, it is likely to cause policy goal achievement.

Another condition to the relation between the conformity and achievement of the policy goal is the acceptance of the policy by the stakeholders. Acceptance has been described in various theories on technology acceptance. Using perspectives from Venkatesh et al. [2003], Briggs et al. [1999], Davis

et al. [1989] theories, we will describe acceptance to mean finding the aspects/features of a policy useful, clear and easy to use by intended users. To make or improve acceptance of the policy result by stakeholders, we need to make sure that their stakes are mirrored in the policy. And the way to achieve this is by making sure that the right and relevant stakeholders are involved in the process and their stakes are considered. While Davis et al. [1989] suggest that the aspects should be useful and easy to use, Briggs et al. [1999] add that that the intended users of the result (policy) should not use much effort to understand, but should easily understand and use these result aspects (policy features). When stakeholders are involved and their stakes are reflected in the final policy, this is likely to cause acceptance of the policy and thus can enable the achievement of the policy goal.

Shared understanding of the policy elements is another condition to the relation between the conformity of policy intentions and the policy goal achievement. Shared understanding of the policy elements depends on the clarity and understanding of the policy elements. In the previous section we explained what clarity and understanding of the policy elements means. We based our argument on the communication theory in [Craig, 1999]. When the stakeholders have mutual meanings and understandings of the policy elements, it can lead to their conformity to and understanding of the policy. When stakeholders conform to the policy intentions or understand the policy, it can enable policy goal achievement.

The model also suggests that a good policy can be achieved if it is complete. The relation between completeness of a policy and policy goal depends on mainly two conditions. The first condition is the availability, sharing and usage of right and relevant information and knowledge by the involved stakeholders. When stakeholders are developing a policy, they are expected to have information and knowledge to guide them in fulfilling the policy aspects. However, having the right, relevant and sharing this information and knowledge and using these resources as a basis for action is another dimension. To achieve this, stakeholders need to be willing to avail share and focus their knowledge and information resources towards achieving a goal [Briggs, 1994]. This willingness can be manipulated by adopting the instrumentality theory of Briggs et al. [2006a, 2005] as explained in the completeness quality dimension in the preceding section. Availing, sharing and using the right and relevant information and knowledge is likely to enable the fulfilment of the policy aspects (completeness), thus can enable the achievement of the goal.

The second condition to the completeness of a policy is the shared understanding and meaning of the policy elements. In the preceding sections, we described what we mean by policy elements. Achieving shared understanding and meaning depends on the clarity and understanding of the policy

elements. As seen in the previous section, clarity and understanding mean that the policy elements communicate the intended behavior to meet the intentions of the policy [Craig, 1999]. When the policy elements communicate the intended behavior as what the stakeholders intended, then these elements are likely to be clear and understood by the stakeholders. This can cause the completeness of the policy and thus can enable the achievement of the policy goal. Nevertheless, any degree of divergence and disparity in the meaning and understanding of the policy elements is likely to impact on the completeness of the policy, and thus can impact on the achievement of the policy goal.

The causal model in figure 5.5 illustrates the contributions from individual constructs to the success of a policy goal. Quality of a policy, defined in the preceding section as: policy acceptance; effectiveness; policy completeness; and shared understanding and meaning of policy elements; can be realised based on the following relations:

- *Policy acceptance*: the reflection of involved stakeholders' stakes in the policy result to achieve the policy goal.

  Policy acceptance can be assessed by comparing all stakes contributed by involved stakeholders with the actual stakes that are useful to and make the policy result to achieve the policy goal.

- *Shared understanding and meaning of policy elements*: are the collective understandings and meaning of relationships between policy elements to articulate intended behaviour so as to achieve conformity to intentions and understanding of the policy.

  Understanding and meaning of policy elements at an individual level can be assessed by comparing the expected policy behavior intentions with the result of the policy intentions, as perceived by an individual.

  Shared understanding and meaning of the policy elements at a group level can be assessed by comparing the communicated intended behavior as prescribed by the policy elements with the intentions of the policy.

- *Completeness of the policy*: the fulfilment of each of the policy aspects with the right and relevant information and knowledge and that these aspects address the policy goal.

  Completeness of the policy on an individual level can be measured by comparing the expected required information and knowledge available with the information and knowledge an individual actually avails,

shares and uses to fill the aspects of the policy, as perceived by an individual.

Completeness of the policy on a group level can be assessed by comparing the planned/intended information and knowledge available to produce the policy with the information and knowledge that the group actually avails, shares and uses to fulfil all the policy aspects to produce the real policy.

- *Policy effectiveness*: quality of the real policy result compared to the policy goal

  Effectiveness for an individual can be determined by comparing the expected policy result and its usefulness with the result and usefulness of policy goal achievement as perceived by the individual.

  Effectiveness on a group level can be measured by comparing the intended group policy goal with the actual group policy goal achieved.

Note that one of the motivations of this research is to establish what makes good policies in collaborative policy making efforts. Given the abovementioned quality dimensions, this theory gives a first understanding of what makes a good policy, and therefore answers our research question 'What makes a good policy from a collaborative PMP effort' as seen in chapter 1. Additionally and important to note is that this theory is harmonised with the existing theory on collaboration developed in [Kolfschoten, 2007]. The harmony between the two theories is based on the fact that the former theory is instantiated from the latter to derive quality dimensions specific to the policy making domain. More so, the former theory has dimensions particularly the effectiveness that is generic from the latter theory. We use this dimension to explain that in the former theory as well. Furthermore, the quality dimensions in the former theory though specific to the policy, we still explain their relationships using existing theories such as [Locke and Latham, 1990, Briggs, 1994, Briggs et al., 2006a] that also the latter theory is based on. Lastly, our theory deals with quality dimensions which are specific to an application domain. This is in line with the suggestion made from the latter theory on extending the generic CE dimensions to dimensions specific to an application domain.

Even though we have understood how to realise a good policy, we did not yet understand what design choices to be considered for designing a quality collaborative policy making process design that can support achieving the policy goal from a collaborative policy making effort. Note that at the beginning of this chapter, we explained that if we first focused analysis on

the understanding of what makes good policies, this analysis could enable us to understand what design choices to consider for designing a quality CPMP process design. The quality process design when used as prescribed should enable the improvement of the CPMP process and the resulting policies. To this end, we use this theory to derive the design choices that should be considered for designing a quality collaborative policy making process design.

## 5.5 Design choices for a quality CPMP process design

From our theory on good policies we can conclude that in order to achieve the group policy goal, the stakeholders' acceptance of the policy results, the stakeholders' shared understanding and meaning of the policy elements, the stakeholders' sharing and usage of the right and relevant information and knowledge resources to fulfil all policy aspects need to be linked. Based on this conclusion, we can deduce that the design choices for a quality CPMP process design to be considered are: a design that supports adequate accommodation of individual stakes to enable the acceptance and achievement of the policy goal; a design that supports the reduction in cognitive load to enable shared understanding and meaning of the policy elements to meet the policy intentions; a design that supports achieving the policy goal; and a design that supports shared resource availability for information and knowledge to permit policy aspects fulfilment.

- **Stakes accommodation** – the extent to which the CPMP design when used as prescribed supports adequate accommodation of individual stakes to facilitate stakeholders' acceptance of the policy results towards achievement of the policy goal.

  Stakes accommodation can be measured from a number of angles. First, we can measure the number of key satisfactory contributions/stakes per each stakeholder taken into account versus total number of contributions from all stakeholders. Secondly, we can measure the total number of key satisfactory contributions/stakes yet match with overall policy objectives. Also we can assess the extent to which key satisfactory contributions/stakes per each stakeholder are taken into account. In addition, we can measure the stakeholders' (participants) perceptions on the policy result.

- **Cognitive load reduction** – the extent to which the CPMP design when used as prescribed facilitates a reduction in the amount of cogni-

tive effort required by stakeholders to ease understanding and meaning of the policy elements to enable stakeholders' conformity to the policy intentions and achievement of the group policy goal.

The reduction in cognitive load can be measured by stakeholders' perceptions on their understanding and ease of use of the process to arrive at a satisfactory policy result. We can also measure the amount of difficulty reported by the stakeholders (participants) during the execution of the process.

- **Shared resource availability** – the extent to which the CPMP design when used as prescribed facilitates shared resource availability for information and knowledge sharing and usage towards the fulfilment of all the policy aspects to enable achievement of the policy goal.

  We can assess the extent to which stakeholders arrive at a satisfactory policy result based on the available information and knowledge resources.

- **Goal achievement** – the extent to which the CPMP design when used as prescribed facilitates focusing the expense of resources towards achieving the group policy goal.

  We can assess the extent to which stakeholders arrive at a useful and satisfactory policy result, i.e. if it meets their set goal.

Given the abovementioned design choices of a quality CPMP design, when analysed they reflect the process requirements (collaborative needs) identified in chapter 4. In other words, these design decisions can be used to take care of the collaborative needs/process requirements for the collaborative policy making process discussed in the previous chapter. When the process requirements are taken care of, this can enable the attainment of quality policies from the CPMP as seen in the preceding sections. The stakes accommodation design choice can be used to take care of the policy requirements stakeholder accommodation. The cognitive load reduction design choice can be used to take care of the stakeholders' understanding of the policy process and ease of identification of the policy elements (with their definitions). The shared resource availability design choice can be used to cater for the completeness of the policy process outcome and policy process efficiency. The goal achievement design choice can be used to cater for the policy process effectiveness.

## 5.6 Conclusions about the theory on CPMPs

In this chapter, we have discussed how to realise good policies from a collaborative policy making process effort. We have identified several quality dimensions for a quality policy and derived a theory from these dimensions. We have also used this theory to derive the design choices to be considered for the designing of a quality CPMP process design. We also observed that the theory developed in this research is in synchronization with the existing theory on collaboration (see [Kolfschoten, 2007]) in terms of extending the generic CE dimensions to dimensions specific to an application domain. Thus far, we can conclude that in addition to the existing generalised quality dimensions for collaboration, our theory gives a first understanding of the policy making application domain-specific quality dimensions that can be considered to realise quality policies from a collaborative policy making process effort. We also conclude that this theory provides the theoretical basis (in terms of the design choices) needed to guide the designing of the CPMP process design. We expect that a quality CPMP process design (designed based on these design choices) when used as prescribed should be able to improve the quality of the organisational policy making process and the resulting policies. In the chapter that follows, we illustrate how each of these design choices can be enabled to support the designing of a quality CPMP process design. In addition, we also describe the designing and validation of the CPMP design, as well as the cases that we use in pursuit of the CPMP that we design.

# Chapter 6

# Design and Validation of a Collaborative Policy Making Process

The aim of this research is to improve organisational policy making processes (PMPs) and the resulting policies using the CE approach. In order to achieve this goal, the first step we took was to identify the collaborative aspects that needed to be enhanced in policy making processes by the CE approach. We discussed these aspects in chapter 4. We then needed a theoretical basis that would guide the CE approach in designing the CPMP process design to meet these collaborative aspects. This was presented in chapter 5. Given this background, we proceed to explain the practical application of the CE approach in supporting to improve the organisational policy making processes and the resulting policies. To design the CPMP process design, we followed the CE design approach discussed in chapter 3. One of the steps in this design approach requires to analyse the task for the process. To analyse this task therefore, we used results from the exploratory studies (see chapter 4). The design criteria for the CPMP process design was based on the design choices given in chapter 5.

We begin this chapter with a description and discussion of the CPMP process design. Based on discussions in [Nabukenya et al., 2007a,b, 2008], we elaborate on the four cases, tools and techniques used in our pursuit of implementing, evaluating and validating the CPMP process design/prescription. We conclude this chapter with a reflection of the CPMP process design validation results.

## 6.1 Designing of CPMP process design

To design the CPMP process design, we used the design choices given in chapter 5. We used thinkLets as the building blocks for the CPMP process design. Note that in the previous chapter, we did not indicate how the design choices can be enabled to support the designing of a quality CPMP process design. In the section that follows, we describe the kind of support needed to enable the designing of a quality CPMP process design. This support is indicated through requirements positioned to the CPMP process design. In other words, these requirements should support the creation of these design dimensions for the CPMP process design.

### 6.1.1 Requirements to the CPMP process design

Table 6.1 is a summary of the requirements that we use to support the creation of the design dimensions for the CPMP process design. The table illustrates the requirements, the effects (design dimension) they should evoke, and the CE components that can be used to enable these dimensions. From the table, following is an elaboration of each of these requirements.

Table 6.1: Summary of requirements to CPMP process design

| **Requirement** | **Effect** | **Component (s)** |
|---|---|---|
| Offering specific guidelines and rules to guide participation and adequate contribution | Stimulate participation, stakes accommodation and giving of required resources such as effort, sharing of knowledge and information for attainment of the policy goal | ThinkLets, Scripts (process & thinkLet) |
| Offering relevant information on the CPMP task such as desired goal and deliverables; Providing an overview of the CPMP process and detailed procedure including the underlying principle behind it; Presenting the rationale of the procedure in a problem-solution arrangement | Cognitive load reduction to stimulate ease of understanding and meaning of policy elements and all other policy aspects for goal achievement | Assumptions document, Sequence of thinkLets, Scripts (activity & thinkLet) |
| Offering specific levels of details on specific activities | Inspire uniformity and shared meaning in content for proceeding activities | Combined thinkLets; Scripts (activity & thinkLet) |

1. Offering specific guidelines and rules to guide participation and adequate contribution by stakeholders involved in the CPMP. This will enable stakes accommodation. It will also stimulate the participating stakeholders to give the required resources such as effort, sharing

of knowledge and information for goal achievement. We use specific thinkLets that have an effect of evoking stakeholder participation and adequate contribution of individual stakes due to inspiration by others. In addition, we also use the process and thinkLet scripts for guidance.

2. Offering relevant information such as the desired goal, requirements, constraints and deliverables of the CPMP process task. Providing an overview of the CPMP prescription and explicit detailed successive steps required for and explaining each process activity including the underlying principle behind this procedure. The rationale of the process activities (separate activities) procedure should be presented in a way that directs the participating policy stakeholders towards solving a policy problem (problem-solution arrangement). In addition, the CPMP prescription should be self explanatory and adequately communicative. This will enable cognitive load reduction, thus permit stakeholders' ease of understanding of the process. This will also permit the flexibility of the CPMP process. We use a sequence of thinkLets, specific combined thinkLets with the respective thinkLet script and detailed prescription of the various activities in the CPMP process with relevant information explaining the underlying principle behind the process procedure.

3. Offering specific levels of details on preceding activities with respect to policy goal and objectives specifications to guide uniformity of, shared understanding, shared meaning and context to policy elements (with their definitions) and implications identification. We use specific combined thinkLets and respective process script guidelines to explain how the preceding tasks with respect to policy objectives inspire what policy elements and implications should be identified.

In addition to the above requirements the different CPMP process activities should be conducted in a way that the use of resources depending on the activity, results in outcomes that fit the requirements for goal achievement. This will permit stakeholders to interactively and optimally use available resources to attain their goal. We provide guidelines on usage and allocation of time and physical resources. We also use specific thinkLets with guidelines on usage of other resources such as effort, knowledge and sharing depending on each activity.

To design a CPMP process prescription that meets the quality criteria in form of the above listed requirements, we will describe how we used the CE design approach to achieve this in the section that follows.

### 6.1.2 Conceptual design of the CPMP prescription

Now that we have determined how to support the creation of the design dimensions for the CPMP process design, we need to determine how each of these support requirements is accommodated leading to the design of the CPMP process design. In this section therefore, we describe how we accommodated the abovementioned requirements and respective components in the CPMP process design/prescription. In designing the CPMP process prescription, we followed the CE design approach discussed in chapter 3. Given the scope of this research and the timeframe in which we did this research, we did not aim at designing a process for transfer or deployment to case organisations. For that reason we did not do an analysis on the investment decision. Therefore in this chapter, we only describe the analysis, design and validation phases of the CPMP process prescription. We started with the analysis phase, in which stakeholders of respective case organisations (see earlier section) were interviewed to elicit the requirements and constraints to the CPMP process. Following is a description of how we used each of the CE design approach steps, the supporting tools and outcomes to design the CPMP process prescription. We illustrate the resulting CPMP process prescription in appendix E. This CPMP process prescription is the refined basic model shown in Figure 1.1 (see chapter 1).

#### Step 1: Task Diagnosis

As shown in chapter 3, this step involves conducting interviews with the problem owner to identify the problem and the goal of the collaboration process. In this research, we performed exploratory studies with three case organisations in which we analysed various aspects about organisational policy making among which included key deliverables of and requirements to PMPs. From this analysis, we identified a broad CPMP process goal, the process scope, as well as key deliverables of CPMPs. We considered the PMP key deliverables as the CPMP process task deliverables. These deliverables were used for stakeholder referencing in order to reduce on their cognitive load while keeping track of (focus attention) what they were supposed to achieve. The CPMP process goal and scope entailed developing a policy that solves a given policy problem. The CPMP process *task deliverables* included:

1. A key deliverable of the CPMP task is a *policy document*. The policy document should define the identified problem with its solutions clearly articulated. Particularly, the policy document should artic-

ulate the policy goals, objectives, policy elements such as compliance/enforcement, policy ownership, guidelines and rules of how things should be done and their implications.

2. Achieving uniformity, shared meaning and understanding of context (of a given policy) and consensus on the key policy goal, objectives and policy elements and their implications.

3. Stakeholders being able to make a decision on final policy document, in terms of agreeing on a policy document that addresses the stated goal and objectives for which the policy was intended.

4. Stakeholders being able to define and prioritise key policy goals and objectives, policy elements and their implications and that these are able to solve the policy problem identified.

5. Each stakeholder being able to adequately contribute to the resulting policy document.

6. Stakeholders being able to avail, share and use knowledge and information resources; yet spend less resources such as effort and time to attain their goal.

The aforementioned process goal, scope and deliverables were also considered as assumptions for the CPMP process prescription. These aspects became inputs to the next step in the designing of the CPMP process design, i.e. activity decomposition.

## Step 2: Activity Decomposition

We discussed in chapter 3 that once the goal and requirements are apparent, the process to complete the task should be determined in this step. In other words, the collaboration engineer needs to further analyse and decompose the task into activities. Some suggestions have been made on how to derive the activities of the process task. One suggestion is by determining if an organisation has a pre-defined way of executing the task. In cases where traditional practices function well or are operational, these may be used as a starting point. If an organisation does not have a functional way, then an alternative would be to use standards provided in literature [Kolfschoten, 2007]. For the CPMP process task, we did not determine its activities from scratch. The CPMP process task activities were a combination of the analysed results from perspectives on the PMP traditional practice with standards provided in literature. Specifically, we obtained the CPMP process task activities from the

abovementioned CPMP task deliverables (see step 1). For a richer representation, these deliverables were used in concurrence with the steps involved in the formation phase of the policy process discussed by Ford and Spellacy [2005].

After determining the CPMP process task activities, we named and sequenced them. The naming and sequencing of the CPMP task activities was done with an intention of providing an overview of the explicit detailed successive steps required to illustrate each process activity, at the same time reflecting the underlying principle behind this procedure. In other words, this sequencing/procedure was done to direct policy stakeholders towards solving a policy problem (achieving a policy goal). In addition, we wanted to display self explanatory and adequate communication to stakeholders so as to reduce on their cognitive effort, while enabling ease of understanding of the policy aspects for achievement of the goal. We named and sequenced the CPMP process *task activities* as follows:

- Activity 1: Formulate policy goals that address defined policy problem
- Activity 2: Group and filter key goals
- Activity 3: Judge the relevancy of each goal in relation to the problem
- Activity 4: Check if key policy goals identified meet defined problem
- Activity 5: Formulate objectives that meet the defined policy goal
- Activity 6: Group and filter key objectives
- Activity 7: Prioritise key objectives
- Activity 8: Formulate candidate policy elements that address the stated objectives
- Activity 9: Group and filter key policy elements
- Activity 10: Prioritise key policy elements
- Activity 11: Define key intended implications for each priority policy element
- Activity 12: Elaborate definitions of each priority policy elements
- Activity 13: Clean up definitions elaborated above
- Activity 14: Check if policy objectives, elements and implications are complete

It is at this point that the collaboration engineer uses *patterns of collaboration* to determine how a group will accomplish each task activity. These patterns are defined in such a way that they are meant to move a group from a starting state to an end state. The patterns of collaboration were described in chapter 3. In this case, the CPMP process task activities abovementioned were converted into patterns of collaboration. In other words, as stakeholder participants moved through the steps of the CPMP process, the patterns of collaboration characterised their activities. This is illustrated in table 6.2 in step 3 of the CE design approach, i.e. this table shows how the aforementioned activities were converted into patterns of collaboration.

## Step 3: Task-ThinkLet Match

This step involves matching *thinkLets* to respective activities once they have reached the lowest level of decomposition. A thinkLet, its components and benefits were broadly defined in chapter 3. Thinklets benefit the design and transfer of collaboration processes in many ways. In our case, we used a sequence of, combination of and specific thinkLets to support collaboration among groups of policy stakeholders towards achieving their goal. More so, these specific thinkLets were selected to ease communication, to create particular dynamism within groups, to stimulate giving of required resources for goal achievement, to permit flexibility of the CPMP process and to document the CPMP process prescription. After decomposing the CPMP process activities, we matched them with specific thinkLets. The task-thinkLet match is illustrated in table 6.2. Table 6.2 visualises the *activities* necessary for formulating a policy, the *deliverables* from each activity that is carried out, the *patterns of collaboration* for each activity, and the related *thinkLets*.

For each of the activities 1 to 14 presented in table 6.2, following is a description of the selection of related thinkLets we used to support the creation of the design choices of the CPMP process prescription.

*Activities 1, 5, 8 & 12*: These activities translate into the "generate" pattern of collaboration. The related thinkLet for these activities is the "DirectedBrainstorm". This thinkLet is usually applied when you want to stimulate teams to think in a given direction during a brainstorming activity. External prompts are given to focus or guide thinking patterns. We applied this particular thinkLet to activities 1, 5, 8 & 12 to enable each participating stakeholder to get equal opportunity to adequately contribute to the resulting policy. In other words, the thinkLet was used to help generate, in parallel, a broad, diverse set of highly creative policy ideas by participants in response to prompts from the researcher (who acted as the facilitator) and the ideas contributed by team mates. For example, in activity 5 the facilitator gave

Table 6.2: CPMP activities, deliverables, collaboration patterns & thinkLets

| No. | Activity Name | Deliverable(s) | Collaboration Pattern(s) | Thinklet(s) |
|---|---|---|---|---|
| **Module-One** | | | | |
| 1 | Formulate policy goals that address defined problem | A list of goals for policy based on defined problem | Generate | DirectedBrainstorm |
| 2 | Group and filter key goals | A clean and non-redundant set of key grouped (and aggregated) policy goals | Reduce & clarify | FastFocus |
| 3 | Judge relevancy of each goal in relation to defined problem | A list of key relevant policy goals | Evaluate | StrawPoll |
| 4 | Check if key policy goals meet defined problem | An agreed upon set of policy goals that address defined problem | Build Consensus | MoodRing |
| **Module-Two** | | | | |
| 5 | Formulate objectives for policy based on policy goals | A list of objectives for policy | Generate | DirectedBrainstorm |
| 6 | Group and filter key objectives | A clean and non-redundant set of key grouped (and aggregated) objectives | Reduce & clarify | FastFocus |
| 7 | Prioritise key objectives | A list of high priority key objectives for policy | Evaluate<br>Build Consensus | StrawPoll<br>CrowBar |
| **Module-Three** | | | | |
| 8 | Formulate candidate policy elements that address the stated objectives | A list of candidate policy elements with respective objectives | Generate | DirectedBrainstorm |
| 9 | Group and filter key policy elements | A clean and non-redundant set of key grouped (and aggregated) policy elements | Reduce & clarify | FastFocus |
| 10 | Prioritise key policy elements | A list of high priority key policy elements | Evaluate<br>Build Consensus | StrawPoll<br>CrowBar |
| 11 | Elaborate definitions of each priority policy elements | A list of definitions for each priority policy element | Generate | DirectedBrainstorm |
| 12 | Clean up definitions elaborated above | A clean and non-redundant list of definitions for priority policy elements | Reduce & clarify | FastFocus |
| 13 | Define key intended implications for each priority policy element | For each policy element, a list of positive and negative implications to the policy | Generate | CouldBeShouldBe |
| 14 | Check if policy objectives, elements and respective implications are complete i.e. meet the desired end states | An agreed upon policy document with policy objectives and policy elements with respective implications that meet the desired end states | Build Consensus | MoodRing |

such a prompt "think about five most important mission objectives that suit the policy". Other prompts are shown in the resulting CPMP process prescription in appendix E.

*Activities 2, 6, 9, & 13*: These activities translate into "reduce & clarify" patterns of collaboration. The related thinkLet for these activities is the "FastFocus". This thinkLet allows participants to quickly extract a clean list of key issues at a useful level of abstraction from the results of the generate activity. It is also applied when it is important to assure that group members agree on the meaning and phrasing of the items on the resulting list. We applied this thinkLet to activities 2, 6, 9, & 13 to enable teams of participating policy stakeholders to avoid problems of redundancy, irrelevancy, and inappropriate levels of abstraction. More so, this thinkLet was used to enable and ease the clarity and understanding of issues participants dealt with. The resulting items that participants chose in activities 2, 6, 9 & 13 were well framed and well understood by teams before they were put on the list as final results. During these activities, the FastFocus enabled oral discussion among participants. This made the participants to believe that the rest of the team had heard and understood their ideas. The oral discussion also enabled negotiations and facilitated agreement on shared meanings for the words the participants were using. Thus, the fastFocus thinkLet enabled the participants to have uniformity, commonality, shared meaning and understanding of all the aspects that make the policy.

*Activities 3, 7, & 10*: These activities translate to "evaluation" and "building consensus" patterns of collaboration. The related thinkLet for evaluation is the "StrawPoll"; while that for building consensus is "CrowBar". The StrawPoll thinkLet allows participants to obtain a feeling of the group's position by casting votes and reviewing results. This is done primarily to initiate a discussion rather than to end it. This is where the CrowBar thinkLet comes in. As a result, the output from the StrawPoll is a tabular and graphical display of the patterns of consensus in the group. The CrowBar thinkLet allows participants to reveal assumptions about issues under consideration. We applied this thinkLet after the StrawPoll in activities 3, 7 & 10 to let participating policy stakeholders hold a discussion to address the reasons for a low consensus on certain policy issues. These patterns facilitated the consensus for attainment of the group goal.

*Activity 11*: This activity translates to a combination of two patterns of collaboration. The first is to "generate", and then to "reduce". The related thinkLet for this combination is "Could-Be-Should-Be". This thinkLet allows a team to move from a poor understanding of complex issues to a clear understanding. With this thinkLet, a team alternates between moments of letting their minds run free (Could-Be) and moments of reflecting and

converging (Should-Be). We applied the Could-Be-Should-Be thinkLet in activity 11 to allow teams first to diverge on what could be implications for each policy element, and then converge on what should be the key ones. This thinkLet enabled the teams to perform this activity over and over until they were certain on the clarity and understanding of the outline for the implications for each policy element that they had made.

*Activities 4 & 14*: This activity translates to "building consensus" pattern of collaboration. The related thinkLet is "MoodRing". The MoodRing thinkLet is usually used when you want to continuously track the level of consensus within the group with regard to the issue currently under discussion. We applied this thinkLet in activities 4 & 14 to allow policy stakeholder teams to decide whether further discussion was necessary on the final policy goal, objectives and elements or if they could discuss more issues that could have been left out. In other words, this pattern facilitated group consensus which in the long run ensured completeness of the resulting policy.

## Modular fashion

As illustrated in table 6.2, the CPMP process task activities are separated in 3 modules: module-one deals with formulation and agreeing on policy goals; module-two deals with formulation and agreeing on policy objectives based on the policy goals stated; and module-3 deals with formulation and agreeing on policy elements (with their definitions) that address the stated policy objectives including making a decision on the resulting policy document. While the resulting CPMP process prescription shown in appendix E exhibits a generic process prescription, we want to note that we originally followed a *modular* fashion in designing this prescription. The choice of a modular fashion was based on given motivations.

First, depending on the kind of policy stakeholders wish to achieve, the policy scope (extent/coverage); ambitions (what the stakeholders want to achieve), instruments and their combinations (what resources are required in what phase to achieve a given ambition) did vary. In other words, as seen in preceding sections on our exploratory studies, organisational policy making involves different levels of stakeholders who perform different tasks in different phases of the policy process. That is, not all kinds of stakeholders are involved in all the phases of organisational policy making. For instance we observed that the top management level stakeholders were responsible for identifying and formulating the policy goals, as well as defining its scope.

Secondly, given the levels of phases involved in policy making, different phases may require different instruments or a combination of them, such as sharing of knowledge and information, and expertise on the part of the

stakeholders involved. For instance, some policy process phases may require only expert-driven stakeholders, while others may require a combination of both expert-driven and non-expert stakeholders to be involved.

Furthermore, some process phases may require more time to achieve a given ambition in comparison to others. For instance, formulation of the policy elements (with their definitions) and implications may require more time as compared to formulation of policy goals. Thus far, the modular fashion was an additional advantage to making the CPMP process prescription more flexible, better still, less resources consuming such as effort and time.

### Step 4: Agenda building

The *Agenda design* (design model) entails a set of vital parameters needed to define each collaboration process step. The design should also show introductions, breaks and other steps in the process description. Also all relevant information for each thinkLet, relevant for validation should be specified in the agenda. We visualised the agenda design in chapter 3. In our case, we designed a broad agenda but instantiated it to suit each case session, e.g. in terms of time allocation, the meeting context, etc. Each of the case sessions took place in two hours. Each session involved breaks, though not long enough given the limited timeframe in which we had to execute the process. More information of what entailed the broad agenda is shown in appendix D.

### Step 5: Design Validation

The step involves validating the process design. Four ways of validation are identified: pilot testing, walk through, simulation, and expert evaluation. These were elaborated on in chapter 3. In our case we validated the CPMP process prescription using the *pilot testing* technique in four case organisations. A more elaborated validation exercise is provided in the section that follows the last CE design approach step.

### Step 6: Design Documentation

In this step, a collaboration engineer produces design documentation (documents) that would be handed off to the organisation practitioner. The assumptions document, process description/script, detailed agenda, and a facilitation process model (FPM) are packaged as documentation. The FPM visualises the sequence of thinkLets and the process flow decisions that have to be considered during the execution of the collaboration process. These documents were comprehensively elaborated on in chapter 3. Even though

our process was not designed for transfer, we still produced the following documentation:

1. *The assumption document* – the assumptions document contained the CPMP task goal, deliverables, scope, timeframe, content/domain expertise, resources and tools that were required. We visualise this document as part of the FPM in appendix E.

2. *The CPMP process overview* (FPM) – As described in chapter 1, the organisational policy making process comprises of six stages. However, as earlier noted in preceding chapters, the scope of this research was on the formation phase of the policy to represent other phases of this process. As such, the CPMP process overview we provide in appendix E describes a sequence of activities involved in the formation phase of the organisational policy making process. Each activity in the CPMP process prescription is described sufficiently to offer a self explanatory overview of the process. The CPMP overview is illustrated using the facilitation process model (FPM) visualised in appendix E. This FPM gives an overview of the generic CPMP process prescription. In other words, it shows module-one activities merged into the pre-development phase, while module-two and module-three activities as the other CPMP process activities that were involved in the formation phase of policy creation task. The FPM shows the logic flow of the policy formation phase from activity to activity till a final policy document is formed.

3. *Scripts* (process and thinkLet) – We made scripts that describe the activities and thinkLets involved in the process to ease execution. The scripts are normally meant for practitioners to ease their work of training their organisational stakeholders. However, in our case, the CPMP was neither for transferring nor training. Therefore the scripts were used by the researchers who acted as facilitators to ease execution and communication of the CPMP process with the case participants and to enable support of creating a quality CPMP process design. The scripts contained information on various aspects. These included explanation of the process goal and deliverables, overview of the CPMP (each activity with the respective pattern of collaboration and thinkLet), ice breaker (for case 4), introduction to the tools used for execution, content presentation, and wrap-up and evaluation procedure. In addition, we also scripted the rules (instructions) on what to do and what to instruct to the group participants based on the thinkLets used in the CPMP process prescription. The scripts enabled us to illustrate the

guidelines, rules and instructions of what the facilitator and participants had to do in order to guide participation and adequate contribution, stimulation of giving required resources and reduce on the cognitive load for attaining the process goal. The script is visualised as part of the FPM in appendix E.

## 6.2 Validation of the CPMP prescription

In the implementation and validation of the CPMP process prescription we used a generic process. The resulting generic CPMP process prescription is visualised in appendix E. We used a generic process and not the modular fashion described above due to a number of constraints. First, the kinds and levels of stakeholders that participated in the validation exercise. These participants were mainly comprised of middle to operational officers who said to us that they did not take much participation in developing policy goals for respective organisations. Secondly, we were constrained by the numbers (size of population) of stakeholders in terms of participation. Three of the four sessions comprised of 5 to 7 participants. Only the session with the students had up to 16 participants. In addition, the policy types that the participants were to formulate did not necessitate going through the first module. The policy problem and working policy goals of respective case organisations were already in existence by the time of designing and validating our CPMP process. The participants in the implementation and validation exercise therefore only had to discuss, agree and use the results from module-one activities as prior knowledge to formulating and deciding on policy objectives and policy elements and their implications. It is on this basis, that we merged module-one of the modular fashion to a 'pre-development' phase as refereed to in the generic CPMP process prescription visualised in appendix E.

### 6.2.1 Techniques and instruments

#### Pilot testing

In this research, we implemented and validated the CPMP process prescription using the pilot testing validation technique. As seen in chapter 3, the pilot testing technique involves implementing the collaboration process, however on a small scale, specifically to enable assessment of the quality of the process by the team members. The pilot testing validation technique involved implementation of the CPMP process prescription using two procedures. The first three collaborative sessions (cases 1, 2 & 3) were conducted manually,

while the fourth session (case 4); we used group support technology (MeetingWorksV7.0). For the manual procedure, pens, papers, a Microsoft Word (MSWord) tool, an LCD projector, removable disks were used. We should note that a CE collaboration process is designed using thinkLets that can be implemented (executed) both with the manual and GSS technology. This means that, irrespective of the procedure used for the CPMP process execution, the participants can still be able to execute this process to achieve their goal since the process is built from these thinkLets.

### GSS Technology

The collaboration technologies that are used to support group work in collaborative problem-solving processes are based on and contain fundamental assumptions e.g. meeting processes should be open, rational, fair, etc, with regard to how people work together [Vreede and Bruijn, 1999]. More examples and details of the assumptions can be seen in [Vreede and Bruijn, 1999]. To determine successful application of the collaboration technologies, the correctness of these assumptions is a vital aspect. In chapter 1, we explained that the Group Support Systems (GSS) are an example of collaboration technologies that have offered added value in terms of anonymity, and parallel communication, among others, to people working together towards achieving a goal [Nunamaker et al., 1991]. Also in chapter 1, we observed that GSS have been applied to inter-organisational policy making networks environments [Vreede and Bruijn, 1999]. In their research, Vreede and Bruijn [1999] argued that the GSS were most effective in creativity tasks than for preference tasks and mixed motive tasks in such an environment. In our case we used the GSS specifically the MeetingWorksV7.0 tool to execute the CPMP process in case-4 session. In the sections above we show how we used the thinkLets to design the CPMP process prescription. Therefore to safe guard the GSS principles (assumptions) in the thinkLets we used in this research, we adopted the work of Vreede and Bruijn [1999]. For instance, we used GSS principles such as anonymity and parallel work in creativity tasks to enable equal participation, while for preference and consensus tasks we applied group-oral discussions to enable democracy.

### Data collection instruments

To evaluate the performance and perception of the CPMP process design by the participants, we collected and analysed explorative data during the 'Observe' activity. In chapter 2, we described what we mean by the 'Observe' activity. Multiple data collection instruments comprising of qualitative and

quantitative questions, respectively were used. The multiple sources were used in order to enable us to collect, analyse and evaluate the theoretical propositions summarised in chapter 5. More so, these sources of data were used to permit rich understanding and comparison and contrast. We used the following multiple data collection instruments:

1. *Direct Observation* – In each of the workshops, the researcher and additional researchers made notes of critical remarks and questions from participants relating to the workshop process and content. Observations were also made relating to a number of pre-defined aspects on the process design. Such aspects included participants' understanding/difficulty of the process, the structure of the process e.g. each activity time length, activity instructions, explanation, etc and thinkLets e.g. adequate to accomplish goal, flow from step to the next.

2. *Questionnaires* – Every after each workshop, we asked participants to fill out a brief questionnaire (see appendix C) that captured information about the process meeting and process outcome satisfaction. Even though the questionnaire contained several questions, in order to get in-depth feedback from the participants, these questions were reformulated i.e. contained different wording and parameters of the two major questions on satisfaction with the process and the process outcome. We used the questionnaire instrument based on [Briggs et al., 2006c]. For details regarding the theoretical underpinning and validation of this instrument, see [Briggs et al., 2006c]. This instrument uses 7-point Likert scale questions, ranging from strongly disagree to strongly agree. The results obtained from the questionnaires were compiled in an Excel spreadsheet to enable computation of the averages and standard deviations in terms of feedback and survey results. This also allowed for comparison among the participants.

3. *Formal and Informal Interviews* – We performed formal interviews using an interview instrument. We asked participants to fill out this instrument every after a workshop. The formal interview instrument comprised of open ended questions that requested participants to say their likes and dislikes about their experiences with the process and the process outcome and to propose suggestions and other comments of how to improve the process to attain useful results. The formal interview instrument is shown in appendix B. The informal interviews were conducted in such a way that we held informal discussions with a few subject matter experts. The informal interviews were held after

each session in order to get a better understanding of the success of the process and the resulting process outcomes.

In addition to the above three data collection instruments, we also stored the *data logs/session data* from the workshops. These contained the contributions from the participants from each of the four cases. The contributions offered the researchers constructive insights specifically about the usefulness and clarity of our assignments to the participants for goal achievement.

Summarising, the aforementioned sources of data all contributed to the 'Reflect' activity of the action research model described in chapter 2. We took into consideration the conclusions that we drew from each of these data sources in the execution of the case session that followed. The analysis from the collected data from each case was used for continuous improvement of the CPMP process design/prescription with an intention of attaining quality process outcome results.

### 6.2.2 Summarised CPMP process prescription

The CPMP process underwent four iterations prior to deriving the final process design. The four iterations of the earlier versions of the process were applied in the four cases we describe in latter sections of this chapter. A detailed final process prescription visualised in appendix E presents the steps required to develop/form a policy document, and the patterns of collaboration with related thinkLets used to guide the group to execute each step. The development/formation phase of the CPMP process has two main parts: part 1 – pre-development phase and part 2 – the development phase. In earlier sections, we already explained why we referred to part 1 as the pre-development phase.

The pre-development phase of the CPMP process involves stakeholder participants familiarising and discussing given elements that are relevant for policy formation. Such elements include the pre-defined policy problem, the ambitions (goals) of the policy, the policy scope, the relevant information to be used to develop the policy, a legal framework to support the policy to be developed, the ownership of the policy. The second part, the development phase, involves these stakeholder participants to identify and agree on policy objectives, then the identification of and agreement on common policy elements with their definitions and respective implications/terms that should suit the desired end state (policy goals and objectives). These activities should finally generate a policy document which clearly articulates solutions to the pre-defined policy problem. Following is a summarised description of what the CPMP process prescription execution entails.

The first activity is the brainstorm activity. This activity is guided by the DirectedBrainstorm thinkLet. With prompts from the facilitator (see the prompts in the CPMP prescription in appendix E), the participants are invited to brainstorm the policy objectives that they think address the predefined policy goals. The prompts are meant to stimulate the participants to think and contribute to the subject at hand. The results from this activity are brainstormed lists of policy objectives.

Using the FastFocus thinkLet, the activity that follows requires participants to organise the resulting list by extracting only the key policy objectives. They do this by grouping and filtering ideas, as well as eliminating any redundancies. They then reframe the extracted key policy objectives in a few words to make a sentence. At the same time, they need to check whether the phrasing suits its intention appropriately. During this discussion, participants are allowed to also crosscheck to see if there is any important objective that has not been posted on the public list. If this arises, a quick DirectedBrainstorm thinkLet followed by FastFocus thinkLet are performed until all participants realise that nobody can find any important issues to add to the cleaned list. The result from this activity is a cleaned list of key policy objectives. The participants then use the above results to limit the cleaned list to the highest priority objectives. They do this by rating the key objectives using a given criteria (see criteria in CPMP prescription in appendix E). The evaluation activity is guided by the StrawPoll thinkLet followed by a CrowBar thinkLet to discuss ideas that may have low consensus. The outcome of this activity is a list of priority key policy objectives.

After formulation of key objectives, in the activity that follows and guided by the DirectedBrainstorm thinkLet, the participants are asked to formulate common policy elements that address the key priority policy objectives. The result of this activity is a brainstormed list of policy elements. Using the FastFocus thinkLet, the participants organise (clean-up) the resulting brainstormed list by grouping and filtering only the key common policy elements. The result of this activity is a cleaned list of key policy elements. Based on the results from this activity, and using the StrawPoll thinkLet followed by a CrowBar thinkLet, participants are then required to evaluate/limit the list to the highest key priority policy elements. The outcome of this activity is a list of priority key policy elements that address the stated policy objectives.

The activity that follows involves defining key terms/implications for each of the key priority policy elements. Using the CouldBeShouldBe thinkLet, participants brainstorm implications that they 'could' consider as appropriate for each priority policy element. Using the brainstormed list of implications, participants then choose implications they 'should' take as key to each priority policy element. The activity that follows requires participants

to elaborate/define each of the priority policy elements. This is guided by the DirectedBrainstorm thinkLet, followed by a FastFocus thinkLet.

Finally, the activities above result into a policy document. Using the MoodRing thinkLet, participants are required to check completeness of the policy document by reaching consensus. They do this by voting on a YES/NO basis, where a YES is voted if the policy objectives and policy elements (with their definitions) and respective implications meet the desired end states, i.e. address the stated policy goals; and a NO if they do not. A verbal discussion is held to address issues identified as incomplete until the consensus on completeness is reached.

Overall, the CPMP process has three distinct features. First, it moves the policy stakeholders from identifying policy goals and objectives (that address a defined policy problem) to deciding on policy solutions in terms of policy elements and their implications. Nevertheless, a policy stakeholder can also decide to start the process in the policy objectives identification phase if the policy goals are defined beforehand, or the policy elements phase if the policy goal and objectives are defined before hand. Second, all the three phases move the policy stakeholders from divergence (brainstorming) to convergence (clearly defining key policy aspects, i.e. goals, objectives, policy elements and their implications). The reason for first diverging is to first allow policy stakeholders to share all the information they wish to, but at the same time make sure that the whole group will leave the policy making meeting/workshop with a clear understanding of what they think are the key policy issues. Finally, in all the three phases, the policy stakeholders have the possibility to not only identify key policy issues, but also prioritise them. This enables the policy stakeholders to walk away with a prioritised 'to-do' policy document. The section that follows is a description of how we implemented and evaluated the generic CPMP process prescription.

### 6.2.3 Evaluation of the CPMP process prescription

In the action research model described in chapter 2, we visited the same case organisations in Uganda used in our exploratory studies to request to conduct collaborative workshops for evaluation and validation of the generic CPMP process prescription. Due to various reasons such as busy schedules e.g. meeting deadlines for funding organisations' reports, field work etc, and getting stakeholders sufficient at the same time, PSI and Actionaid-Uganda respectively, did not accept to our request. To deal with this constraint therefore, we involved 3 new case organisations, one from Uganda and two from the Netherlands. In total we had four case organisations including MOFPED in which we implemented, evaluated and validated the CPMP

process design. Three of these four case organisations were in industrial settings and one was from an inexperienced environment. The evaluation workshops were conducted between August 2006 and June 2007.

In evaluating and validating the CPMP process design, we aimed at addressing how to improve the collaborative policy making processes and the resulting policies. The improvement of these processes and their outcomes is reflected in the definitions of a quality policy and a quality CPMP process design, respectively (see chapter 5). The definition of a quality policy is: policy acceptance; effectiveness; policy completeness; and shared understanding and meaning of policy elements. The definition of a quality CPMP process design is: stakes accommodation support; cognitive load reduction support; resources shared base support; and goal achievement support. Using this evaluation and validation goal, the CPMP process design underwent four iterations prior to deriving the resulting generic CPMP process design visualised in appendix E. The four iterations of the earlier versions of the generic CPMP process design were applied with three policy types. All the policy types were IT related. Also the stakeholders that participated in this exercise were all from IT/MIS related departments. In the subsections that follow, we describe the cases that were involved. For each case we first give a brief profile of their IT units, and then we describe the participants' group characteristics, followed by a description of what transpired prior and during the evaluation and validation exercise, the results from each case, and finally our conclusions about the process and the process results.

## Case1: Ministry of Finance, Planning & Economic Devt

The Ministry has had a functional IT department for about 5 years now. Previously there existed only islands of connectivity within the Ministry governed by respective departments or projects within the organisation. Consequently it was realised that with the impending IT revolution and the Ministry spearheading the transformation of government accounts from the paper-based system to online accounting, the Ministry had to be one unified platform with different layers of redundancy and security. The IT department is now involved in a series of activities which include but are not limited to: end-user support on business productivity using Information and Communication Technologies (ICTs), in this case online file storage, email and centralised printing; sensitising users into the culture of using computers for their day to day activities in a bid to achieve a paperless office hence a reduction in cost. The department aims to digitise all current and archive information with a view to move towards automated workflow systems in 2 years' time. It is also responsible for formulation of training requirements for

the different user groups as the need may be. In addition it provides technical consultancy and direction on procurement of ICT goods and services across the Ministry and government as the need may rise.

Prior to conducting the collaborative workshops, we had a prior visit to the Ministry IT manager to ascertain the policy they wanted to be developed, at what level it was, and the requirements they needed to be able to formulate this policy. The IT manager informed us that they wanted to develop many kinds of policies among which the end-user IT policy was included. The manager informed us that this policy was to answer the problem they had already identified on how, when, and what to use the IT with all the users in the Ministry, i.e. how to support the end-users. The goals of this policy were also pre-defined by the top management and the IT heads of various departmental sub-units. This meant that they only needed to identify the remaining elements to make it a working policy for the users. The IT manager also informed us that all the IT officers within the department had the prior information needed to make this policy a working document. This meant that our collaboration workshop participants had the possible resources such as expertise and significant information they needed to use in the workshop.

The Ministry case was used to observe the performance of the CPMP process in a governmental setting. We used the manual procedure to execute the CPMP process. A description of what comprised this procedure was given in the validation instruments above. We set up a team of 5 IT department officers involved in making policies for the Ministry. The team comprised of only male participants who were between the ages of 31 to 44. The team had to develop an End-user IT policy for the Ministry using this CPMP process. At the start of the session, the researchers and participants introduced themselves. There were three researchers of which one acted as the facilitator, and the other two as observers of the session. The facilitator introduced the session meeting goal, the agenda, the meeting context, the timeframe in which the session was to be conducted, the background to the pre-development elements and the procedure which was to be used for the process execution. The procedure included usage of tools such as pens, papers, chats and an LCD projector. The pre-development elements included the pre-defined policy problem and policy goals, and information that was available for usage.

The facilitator also guided the participants through the activities of how to execute the CPMP process by explaining each agenda activity, giving assignments, and guiding the discussions. The preset time for process execution was two hours to develop the End-user IT policy. They started the process by discussing and agreeing on the pre-development elements as these elements were very significant to the proceeding steps of the process. During the ses-

sion, both observers made note of what transpired with an aim of examining the preset quality criteria of the CPMP process design, while one of them was keeping track of time. At the end of the session, the participants filled out a questionnaire and interview instruments to collect their perceptions on the CPMP process. We used the feedback from this session to make the first improvements to the CPMP process design.

### Experiences with the CPMP

During the execution of the workshop, the participants had various experiences with the CPMP as compared to the old way of doing things. First, the participants mentioned that they had the opportunity to get acquainted with other participants' suggestions and requests. They experienced this opportunity during the brainstorming and reducing and clarifying of their ideas. The participants mentioned that during the convergence activities, they were able to discuss and arrive at a joint understanding of key policy issues. The participants mentioned that the brainstorming and clarifying on their ideas facilitated awareness of each participant's desired policy aspect for the resulting policy. They felt empowered as they had been able to share all feedback that they considered relevant and crucial. The participants mentioned that in their traditional approach, they did brainstorm about policy ideas but converging to the prioritised key policy ideas did not happen, even though a policy had to be produced at the end of their meetings.

In the old way of doing things, the participants mentioned that they did not have the chance to understand what each of the policy aspect defined in the resulting policy meant or how useful it was. In addition, they mentioned that there was hardly respect of each stakeholder's idea and suggestion, as most of the time the environment in which they made policies was surrounded by e.g. win-loose negotiation, fear, personal interests, resistance to change etc. Secondly, the ability to reach consensus earlier on each of the policy aspects was a good experience with the CPMP as compared to the old way of doing things. They mentioned that usually it took them many hours to get to the final policy they wanted. Thirdly, the ability to work with different people at the same levels and producing various ideas was a good experience with the CPMP. This was not possible in their traditional approach.

### Results

In tables 6.3 and 6.4, we present the results of the questionnaire that we distributed to the participants about their satisfaction with the CPMP process and the process outcomes. As seen in the section on data collection in-

struments, this instrument uses a 7-point Likert scale ranging from strongly disagree to strongly agree.

Table 6.3: Satisfaction with process

| **Question** | **Average** | **Std.Dev.** |
|---|---|---|
| Satisfaction with how the meeting was conducted | 4.800 | 1.304 |
| Feeling about meeting process | 4.600 | 1.342 |
| Satisfaction with meeting progress | 4.200 | 0.837 |
| Satisfaction with the procedures used in meeting | 4.600 | 2.302 |
| Satisfaction with how activities are carried out in the meeting | 5.800 | 1.095 |
| **Average of Average & Std.Dev.** | 4.800 | 1.376 |

Table 6.4: Satisfaction with process outcome

| **Question** | **Average** | **Std.Dev.** |
|---|---|---|
| Feeling about meeting outcome | 5.400 | 1.140 |
| Satisfaction with achievements of meeting | 5.200 | 1.304 |
| Satisfaction with meeting results | 5.400 | 1.140 |
| Feeling of satisfaction on meeting accomplishments | 4.800 | 1.095 |
| Happiness with the results of meeting | 5.000 | 1.871 |
| **Average of Average & Std.Dev.** | 5.160 | 1.310 |

Note that in the section on data collection instruments, we already explained that the questionnaire instrument contained several re-formulations of questions on two broad aspects of the satisfaction with the process and the process outcome. The questions were re-formulated in order to get in-depth feedback from participants. This means that the scores on these re-formulated questions in each table do vary and could have various interpretations in each of the four cases. For instance, one interpretation could be that a particular question was more understood and clear enough to the participants compared to others. Therefore, we do not aim to explain each of the re-formulated question score; rather, we provide the broad interpretation of the participants' satisfaction with the process and the process outcome.

Using the results from the above tables, the scores indicate that the participants were more satisfied with the process outcomes (resulting policy) than the process it self. A higher score in the process outcome was because the participants worked towards attaining a policy that they could use to solve their end-user support policy problem. The participants' interests was on the resulting process outcome (policy document) and how best the process they executed could enable them to achieve this outcome. From the researchers' perspective and based on the figures in the tables above, both

the process outcome and the process were satisfactory. This is reflected in the participants' ability to obtain the process result i.e. the policy document from using this process.

To evaluate the process CPMP process design criteria, we used formal interviews with open-ended questions, informal interviews, and observations. The observations had pre-defined aspects related to the CPMP process design evaluation criteria. In evaluating the process design we aimed at assessing how best this process design provided for the quality collaborative policy making processes to obtain quality policies.

Regarding goal achievement (process effectiveness) and shared resource availability (completeness of the process outcome), we measured how well the participants managed to come up with a policy at the end of the process execution using the resources that were availed to them. From our observations, we noted that the participants effectively managed to formulate an End-user IT policy. This was demonstrated during the consensus stage of the process (see table 6.12), and also based on results from satisfaction with the process outcomes. In the consensus stage, participants were required to check if the policy document met the desired policy goals for which it was intended for. They did this by voting on a YES/NO basis, where a YES was voted if the policy objectives and elements (with their definitions) and respective implications/terms met the desired end states and a NO if they did not. The voting results for all the four cases were summarised in one table as shown in table 6.12 for comparison and analytical purposes. Based on the feedback from the voting sheets it was observed that the participants achieved effective results, i.e. they managed to form a policy based on the desired end states. For those that voted a NO, a verbal discussion was held to re-address their issues until some level of consensus was achieved.

On the accommodation of stakes (policy requirements stakeholder accommodation) we measured the stakeholders' (participants) perceptions on the policy result. We used the satisfaction results on the process outcome in addition to the formal and informal interview feedback. We also used the session data logs and the consensus voting results shown in table 6.12. Based on the data logs, the results and from our observations, the participants adequately contributed to the formation of the resulting policy. That is, the participants were able to contribute and their contributions taken into account during formulation of ideas. The consensus activity enabled stakeholders to discuss and arrive at satisfactory policy outcomes in relation to overall policy objectives. The one participant who voted a 'NO' felt that there was need to add another policy element (i.e. the IT protection) in the policy. But the rest of the group explained to this participant that this element was out of scope for that specific policy. They mentioned to this participant that he

was aware of the policy type that catered for this element.

Concerning the reduction in cognitive load (understanding of the policy process and ease of identification of the policy elements), we measured how well the participants used the process i.e. understood the process tasks in order to successfully execute the process to come up with a policy. We observed that the participants were able to execute the process with minimum effort and difficulty. Our observations were based on facts such as there were minimal questions of how to do things, and also the participants being able to come up with a policy at the end of the session having followed the successive activities. In other words the activities were clearly explained. We also used the session data logs and the results on consensus levels. Based on these data logs, the voting results and from our observations, the participants used minimum effort to define the policy aspects.

For the efficiency of the process, we considered the execution duration of each stage of the process and the resources available. About the time length, the execution of the process took 30 minutes more in addition to the 2 hours that were pre-defined. Based on their formal and informal interviews feedback, the participants indicated that they were mainly interested in seeing what the process could enable them to accomplish. That is, they wanted to see how different this process was and what it was capable of accomplishing compared to the traditional set-up. The positive responses that we received were mainly on the process length and how useful the process was to the participants' work, working with various people and combining efforts to achieve their goal. In other words, the process enabled them to formulate ideas about a variety of subjects with different people, and in a short time as compared to the time spans in their own traditional settings. More so, the process enabled participants to work in a systematic direction in order to realise their goal. Based on these remarks, we can say that the CPMP provides a better way of doing things as compared to the traditional settings in terms of supporting team efforts towards a achieving a common goal among various and different stakeholders with different interests and perceptions.

The negative remarks about the efficiency of the process were mainly related to inadequacy of the procedure we used to conduct the session, and the inadequate time allocated to discussions activities. That is, discussion activities were given less time yet were more demanding. The specific activities highlighted concerned the filtering and grouping of ideas. This session was the first we tried with our process and this particular procedure. This meant that we did not know what to expect from the participants about the procedure. Even though the process took a length of two and half hours, some participants still queried if there were no possible technologies to be used for the execution procedure. We appreciated the fact that there are group

support technologies that are used to support collaborative group-working, but in our case we did not have access to such technologies due to financial constraints to obtain the software.

About the time allocations to the different activities, we observed that there was inefficiency in discussions and uneven amount of time required to complete some activities. This affected the activities that followed in terms of time. A particular activity that was highlighted was on identifying common and priority policy elements with their definitions. The participants executed the policy objectives and policy elements formulation tasks in parallel which made the process very slow. The participants generated policy elements that were more or less related to the meeting goal; but many of these did not address stated policy objectives formulated in the previous activity. This also affected the discussion/cleaning-up time and completeness of the process in terms of trying to match the out-of-scope formulated policy elements to stated policy objectives.

The above feedbacks suggested to the researchers the need to allocate more time to such activities than those that did not require much thinking and effort. Based on these suggestions, we revised the CPMP process to accommodate more time for evaluation and preference activities than the creativity activities. We also changed to the sequential execution of the two activities as the former activity was the basis for the latter, i.e. the policy elements being formulated had to address policy objective(s) stated. In addition, we realised that we had made this process activity very broad. Thus we needed to further decompose this activity in order to improve on the understanding of process. In other words reduce on cognitive effort and time required to execute this particular activity and the proceeding activities. All these were used for improvements to the first CPMP process design.

## Case-2: RUN Students

Case-2 was identified by one of the researchers. Prior to testing the CPMP process with this case, the researchers had a few meetings with one of the Concerninformatiemanagement (CIM) officers who expressed interest in using a collaborative method to elicit requirements to the assignment they had before hand. The requirements were the architecture principles for the student information portal. Architecture principles are several forms of IT policies [Davenport et al., 1989, Tapscott and Caston, 1993]. While in these meetings, the CIM officer presented the pre-defined problem, its goals, the owners of the end-product, and the information they were to use to accomplish this assignment. This meant to the researchers that the CIM department had defined the goals of the student information portal, but that it still

required the architecture principles.

Case-2 was used as an inexperienced environment in evaluating the CPMP process. We set up a team of 16 participants from the Institute of Computing and Information Sciences of Radboud University Nijmegen (RUN) in the Netherlands. The team comprised of 2 participants from the CIM department and 14 participants were Masters Students (Year 2, Computer Science) following a course on Modelling of organisations (Modelleren van organisaties). The team of 16 participants comprised of 2 females and the rest males, with an age bracket of 21 to 47 years. The Masters students were required to formulate architecture principles for a case scenario as part of their course assignment. The CIM officers were required to formulate architecture principles for the student portal information system for RUN. In the process of eliciting requirements for the portal, the CIM officers needed first hand information from the intended users of the Information portal. Thus, to the CIM officers, this session was used as a requirements elicitation activity in the process of developing the Information portal.

The 14 students were inexperienced in developing policies, but were mainly used to provide the information that would be relevant to the student information portal. The 2 experienced CIM participants mainly assisted the students with suiting the appropriate content to the right activities as well as examining whether what they had prepared to be on the portal was what the students expected. The students used the CPMP process to develop a policy in form of architectural principles for the student portal Information System for RUN. The procedure used in executing the CPMP process was the same as that described in case-1.

In the collaboration session, we were three researchers. One researcher acted as the facilitator, the second researcher was the domain expert, also helped with the Dutch-English and the reverse translations where it was required, and also worked with the third researcher as observers in the session. The CIM participants too assisted in observing the session. At the end of the session, the participants filled out the questionnaire and interview instruments to collect their perceptions on the CPMP process. We used the feedback from this session to make the second improvements to the CPMP process design.

### Experiences with the CPMP

The students' experience with the CPMP process was positive in terms of their ability to do their course assignment at the same time were able to identify the information they needed for their portal. The students mentioned that much as they had not experienced developing requirements for a system

before, the CPMP provided them with steps they easily followed in order to accomplish their assignment. They also mentioned that they had the opportunity to work together in a big group on an assignment, which they had never experienced before. The students mentioned that the CPMP enabled them to get familiar with other students' suggestions and requests.

The participating officers in the students' CPMP execution session observed that the CPMP forces participants in a direction in which they are obliged to perform some actions in a specified order. They mentioned that this was not the same with their traditional set-up. The participating officers mentioned that the CPMP process in comparison to the traditional way of doing things enabled participants involved in the process to yield useful results in terms of the specific things the intended users want most, e.g. in their case, the resulting architecture principles prioritised by the students gave better understanding of the things students found most important and relevant for their information portal. These officers mentioned that the converging activities enables a group of people to identify and prioritise at the same time be able to have a shared understanding on issues they consider most important. The officers mentioned that prioritising and reaching consensus earlier on these architecture principles could not have been possible in their traditional settings. In addition these officers also applauded the CPMP process ability in enabling participants to formulate a variety of ideas about a variety of subjects and with different groups of students. They observed that such experience did not happen in the traditional way of doing things.

### Results

In tables 6.5 and 6.6, we present the results of the questionnaire that we distributed to the participants about their satisfaction with the CPMP process and the process outcomes.

Table 6.5: Satisfaction with process

| **Question** | **Average** | **Std.Dev.** |
|---|---|---|
| Satisfaction with how the meeting was conducted | 3.625 | 0.619 |
| Feeling about meeting process | 4.063 | 1.181 |
| Satisfaction with meeting progress | 3.625 | 1.258 |
| Satisfaction with the procedures used in meeting | 3.875 | 0.885 |
| Satisfaction with how activities are carried out in the meeting | 4.000 | 1.033 |
| **Average of Average** & **Std.Dev.** | 3.838 | 0.995 |

Table 6.6: Satisfaction with process outcome

| **Question** | **Average** | **Std.Dev.** |
|---|---|---|
| Feeling about meeting outcome | 4.688 | 1.014 |
| Satisfaction with achievements of meeting | 4.250 | 1.065 |
| Satisfaction with meeting results | 4.375 | 1.147 |
| Feeling of satisfaction on meeting accomplishments | 4.000 | 1.033 |
| Happiness with the results of meeting | 4.500 | 1.211 |
| **Average of Average** & **Std.Dev.** | 4.363 | 1.094 |

Like in case-1, the results in the tables above show that case-2 also had a high score with the process outcome than the process itself. However, these scores i.e. for both the process and process outcome, are low compared to the results of case-1. This is because the students were inexperienced in developing policies and also their interest was mainly to accomplish their class assignment. Despite the low scores, the results still indicate that the participants were some what satisfied with the process outcomes. From the researchers' perspective, the process was not so satisfactory in case-2 session. This is because the students attached less interest in the performance of the process.

For evaluation of the CPMP process design criteria, we still used the same tools as used in case-1. We used results in the summarised voting table 6.12 to discuss goal achievement (process effectiveness) and shared resource availability (completeness), and stakes accommodation (stakeholder accommodation) for case-2. Based on these results and from our observations, the students fairly managed to formulate architectural principles for their Information portal using the process and the available resources. In addition to these results, we also observed that the students were each given an opportunity to contribute to the formulation of these principles. The students used the consensus activity to discuss and arrive at these architecture principles.

Regards the efficiency and reduction in cognitive load (ease of understanding and ability to uniformly identify policy elements), we asked both the students and the experienced participants. The majority of the participants felt that the process execution time of 2 hours was fairly efficient. In terms of the cognitive load, we observed that the students used much effort at the beginning of the process as the whole idea of formulating policies was completely new to them. They had questions on what they were expected to do/achieve. The facilitator needed to re-explain the first activities thoroughly well. Based on the feedback from the formal interviews, the students indicated that they were mainly interested in the outcome/results

of the process than the process itself. This is because to the students, their interest was giving their ideas of what they wanted the Student Information portal to deliver. More so, the students used this process to enable them to achieve their course assignment. This meant to the researchers that the CPMP process to the students was mainly a means to attaining their course assignment. In other words, we did not get much feedback from the students on how to improve the process. Their negative feedback was mainly on the manual procedure we used, i.e. it caused much chaos and noise in the session.

From the 2 experienced participants, we asked them to give us tips of how to improve the process. We received quite a number of suggestions and also positive comments on the process. The positive comments were mainly on the systematic approach of the process, in such a way that it forces participants in a direction in which they are obliged to perform some actions in a specified order. Also the usefulness of the process results, as these results gave better understanding of the things students found most important. In addition they found the process useful as it enables participants to formulate ideas about a variety of subjects and with different groups of stakeholders. The negative comments were mainly on the room (physical set-up) and the lack of tool that caused problems such as noise and time delay. The suggestions we received were summarised as follows: to make smaller groups than big groups so that we can manage the participants in a better way and also get their attention easily; to use a professional tool so as to reduce on time delay in activities which do not require much attention or in-depth discussions such as the brainstorming tasks; and allocation of more time to work on definitions and precisely formulated principles. In other words more time should be allocated to activities where there is need to have in-depth discussions and thorough attention to give precise definitions of ideas.

We used these suggestions to make improvements to the second version of the CPMP process. We made changes by having smaller numbers of participants in validation sessions that followed and also adding more time to the preference activities. Having smaller numbers in the last sessions enabled us to manage the process activities in terms of easily explaining to almost each participant that required our attention. More time additions to the preference activities enabled the formulation of more precise and explicit end-results as we shall see in the session results that follow. These changes resulted into less to none significant suggestions for further improvement of the CPMP process.

## Case-3: National Social Security Fund (NSSF)

It is a scheme mandated by the Government through the National Social Security Fund Act to provide Social security services to all non-pensionable employees in Uganda. It is a compulsory savings scheme that covers all employees in the private sector, including non-governmental organisations and parastatal bodies that are not covered by the Government's Pension Scheme. It is currently only those organisations that employ five or more employees that are eligible for registration although individuals are allowed to register voluntarily and save with NSSF. NSSF administers and pays qualified contributing persons the following benefits: Old Age, Invalidity, Survivors, Withdrawal and Emigration. In case any of these contingencies occurs, a member or dependent survivors (in case of death) is paid a lump sum benefit, being the total contribution a member has on his/her account plus the interest earned throughout the contributing period. NSSF is organised along 8 departments among which the Management Information Systems (MIS) department is included.

The MIS department offers support to all the other departments in the institution by computerizing all functions executed by each department and offering other support services which include user support to all staff using IT equipment, maintains the Fund's Wide Area network which inter-connects the 15 NSSF offices scattered all over the country used leased lines, maintains the Fund's website and e-mails, develops and maintains all user applications that are used in the operations of the Fund, offers IT services, maintenance and purchasing of IT equipment throughout the Fund, stores and manages all the data that is used in all operations of the different departments on the different servers, and ensures and provides computer literacy to all staff in the Fund.

We made a prior visit to NSSF MIS department to establish what kind of policy they wanted to be developed using our collaboration process. The MIS department manager informed us that many policies were already in place, but some more were needed. Among these was the policy on guarding against IT security breaches in their organisation. This meant that there was already existing information on which the participants would refer to when developing this policy.

We used this case organisation to observe the performance of the process in an industrial setting. We set up a team of 6 MIS department officers experienced in making IT policies for NSSF. This team used the process to develop their security policy on "Guarding against IT Security Breaches". The team comprised of 1 female and the rest males with an age bracket of 26 to 49 years. The procedure used in executing the CPMP process was the

same as that described in cases 1 & 2.

Two researchers were involved in this case session. One researcher acted as the facilitator while the second researcher was an observer in the session. At the end of the session, the participants filled out the questionnaire and interview instruments to collect their perceptions on the CPMP process. We used the feedback from this session to establish if the improvements we made to the CPMP process design had been effective.

### Experiences with the CPMP

From their experiences with the CPMP process, the participants mentioned that this process enabled them to adequately contribute. They mentioned that the brainstorming, clarifying and discussion activities enabled at least each of them to contribute, respect each other's idea and suggestion. The participants said that they had not been exposed to this kind of experience in the traditional way of doing things. Most of the time they made policies, there could be more of a few people within the meetings giving ideas and others doing the listening as long as a policy was produced.

The participants also experienced that they were able to share many resources among the group to realise the policy as compared to the traditional setting. They mentioned that with the process activities and instructions, they are forced to share more information and knowledge, at the same time sharing effort about the policy they were developing. They mentioned that they were able to share understanding and pay attention to the policy aspects they considered more useful to the policy. It is during the reducing and clarifying of ideas that the participants were able to achieve the joint understanding.

The participants mentioned that in their traditional setting, if given such an assignment, the involved stakeholders would each use their own resources as long as a policy was produced. The participants applauded the reaching of consensus earlier than expected as compared to the traditional setting. They also liked the CPMP logical flow, i.e. in following the CPMP process from first to the last activity, they were able to more effectively and efficiently develop a policy in a time length they least expected as compared to the traditional approach.

### Results

Tables 6.7 and 6.8 present the results of the questionnaire that we distributed to the participants about their satisfaction with the CPMP process and the process outcomes.

Table 6.7: Satisfaction with process

| **Question** | **Average** | **Std.Dev.** |
|---|---|---|
| Satisfaction with how the meeting was conducted | 4.333 | 1.366 |
| Feeling about meeting process | 4.167 | 0.983 |
| Satisfaction with meeting progress | 4.500 | 1.517 |
| Satisfaction with the procedures used in meeting | 4.667 | 1.633 |
| Satisfaction with how activities are carried out in the meeting | 4.833 | 1.329 |
| **Average of Average** & **Std.Dev.** | 4.500 | 1.366 |

Table 6.8: Satisfaction with process outcome

| **Question** | **Average** | **Std.Dev.** |
|---|---|---|
| Feeling about meeting outcome | 5.833 | 0.753 |
| Satisfaction with achievements of meeting | 5.333 | 0.816 |
| Satisfaction with meeting results | 4.833 | 1.169 |
| Feeling of satisfaction on meeting accomplishments | 5.167 | 0.983 |
| Happiness with the results of meeting | 5.667 | 0.816 |
| **Average of Average** & **Std.Dev.** | 5.367 | 0.908 |

The scores in the above tables are higher than the scores in the previous case. The scores illustrate that it was apparent that it became easier for the participants to use the process to accomplish their goal as compared to the previous case. In the above tables, the scores on the process outcome are still higher than the scores for the process. This means that the participants found the process results very useful to them, i.e. the policy result met their goal. From the researchers' point of view and based on these results, we observed that the participants were reasonably satisfied with the process outcomes and the process by which the policy was formed.

To evaluate the CPMP process design criteria, we still used the same tools used in cases 1 & 2 and results summarised in the voting table 6.12. From these results and based on feedback we received, the participants indicated that the process in terms of effectiveness and completeness, stakeholder accommodation, and ability to uniformly identify policy elements was a good method for them to use to develop policies. The participants indicated that the process enabled them to adequately contribute. The participants also indicated that they used minimal effort to realise the policy. These factors combined showed that the participants were able to achieve their goal. That is, in following the process from first to last activity, the systematic flow enabled the participants to effectively develop a policy in a time length they least expected as compared to the traditional approach.

In spite of the variations in scores, we still received more of positive

than negative feedback about the efficiency and ease of understanding of the process. The positive feedback mainly reflected about the process providing ability to combine team efforts towards achieving a goal, as compared to their traditional settings. More so, the process clearly demonstrating the ability of how participants can best formulate relevant ideas and content and these addressing a given problem through brainstorming sessions. In addition, the participants commended the process being able to provide an interactive environment for them and a systematic methodology to solve a problem. The participants mentioned that in the old settings, it was hardly possible for the stakeholders to combine efforts; i.e. the stakeholders would each consider their own interests to fit the policy, and putting these together to arrive at acceptable results was difficult. We received few suggestions on how to improve the process. The suggestions included scheduling enough time to adequately complete the policy document, making sure that the quiet participants also get involved in the process, and using a better procedure tool to manage time than the one provided in their session. We used these suggestions to consolidate the refined CPMP process design.

## Case-4: Concerninformatiemanagement (CIM)

The department of Concerninformatiemanagement (CIM) is responsible for the coordination and functional maintenance of all the campus-wide used Information Systems (IS) of RUN. These include: the enterprise architecture, standards, coherence, interfacing and future-development plans. Since January 2008 the directors of the information domains are responsible for the systems used in their own domain. Before that the former department 'CIF' (Control, Information and Finance) was the owner of all the systems and responsible for project plans and innovation. The CIM department is responsible for the overall architecture, maintenance and coordination.

Prior to the session, we had a meeting with some CIM officers to discuss about what requirements would be needed when executing process. We were informed that the pre-defined goal was how to use the portal system and service oriented architecture to bring all information for students together. The relevant information to be used contained information items or portlets, and these were to be defined by service definition groups. They also informed us that the owner of the student information domain would be the owner of the portal and responsible for the project. In addition, the owner of the information system domain would be responsible for the service oriented architecture. We were also informed about the scope of the portal. The scope was that the system would be used campus-wide and instead of other channels (not as an extra) and that most of the necessary information and

functionality was already available in one of the campus information systems.

We used the CIM department as a follow-up session on suggestions they had made to us in the previous case session with the RUN graduate students. In other words, we used this case to observe the performance of the process in an industrial setting in comparison to the inexperienced environment. We set up a team of 4 officers from the CIM department including the 2 participants in the previous session with students. These officers were experienced and involved in formulating business rules, regulations and architecture principles for Information Systems for RUN. In addition to this team, 3 student representatives acted as stakeholders in this exercise since their perspectives on what information would be important for them was still required. In total we had 7 participants comprised of 4 females and the rest males with an age bracket of 19 to 51 years.

We used the collaborative technology software MeetingsWorks V7.0 to execute the process. The team used the CPMP process to formulate architecture principles for the RUN Students Information Portal. We used the feedback from this session to establish if the improvements we made to the CPMP process design based on the suggestions received from the earlier session with RUN participants had been effective. Three researchers were involved in this session, of which one acted as the facilitator. The second researcher was a domain expert in the field of enterprise architecture and also acted as an observer. The third researcher was the chauffeur of the technology we used in the session.

**Experiences with the CPMP**

The participants mentioned that the CPMP process enabled different stakeholders to be actively involved and working towards achieving a common goal. They liked the fact that the CPMP enabled the students and the CIM officers to work together. They mentioned that in the traditional settings the students would still be involved in the identification of the information requirements for the student portal but would have used other methods of getting their input such as questionnaires, interviews and also posting information on the website. The participants liked the CPMP activities of brainstorming, converging and consensus in which they were able to each identify as many architecture principles as they could, at the same time respecting each other's idea and suggestion and also shared an understanding of what they found most important for the students portal. The participants mentioned that this does not happen in their normal way of doing things.

### Results

Table 6.9: Satisfaction with process

| **Question** | **Average** | **Std.Dev.** |
|---|---|---|
| Satisfaction with how the meeting was conducted | 4.714 | 1.380 |
| Feeling about meeting process | 5.143 | 0.690 |
| Satisfaction with meeting progress | 4.857 | 1.464 |
| Satisfaction with the procedures used in meeting | 4.571 | 0.976 |
| Satisfaction with how activities are carried out in the meeting | 4.714 | 0.756 |
| **Average of Average** & **Std.Dev.** | 4.800 | 1.053 |

Table 6.10: Satisfaction with process outcome

| **Question** | **Average** | **Std.Dev.** |
|---|---|---|
| Feeling about meeting outcome | 5.429 | 0.535 |
| Satisfaction with achievements of meeting | 5.714 | 0.488 |
| Satisfaction with meeting results | 5.571 | 0.535 |
| Feeling of satisfaction on meeting accomplishments | 5.143 | 0.900 |
| Happiness with the results of meeting | 5.571 | 0.535 |
| **Average of Average** & **Std.Dev.** | 5.486 | 0.598 |

Tables 6.9 and 6.10 present the results of the questionnaire that we distributed to the last group of participants for their satisfaction about the final version of the CPMP process and the process outcomes.

Based on the results in these tables, they indicate that the participants were satisfied with the process outcomes and the process by which the architectural principles were formed. From the researchers' point of view, the process was above average satisfactory. The scores on both the process and the process outcomes are more or less like those in case-3. These results indicated to the researchers that the participants' suggestions made in the first three case sessions were met. For instance, from these results we saw that the process became easier to execute as compared to the three previous cases.

To evaluate the CPMP process design criteria, we used the same tools as those used in the previous cases and summarised voting results shown in table 6.12. Based on these results and feedback received from the interviews, the participants were happy about the software tool though it also had its limitations. The participants specifically commended the execution length; the ability to anonymously contribute and the ability to discuss in-depth crucial ideas to give precise definitions. The participants indicated that the

CPMP process was an adequate method for them to use as it enabled them to develop the initial requirements (architectural principles) for the information portal more effectively and efficiently as compared to the old way of doing things.

In their traditional way of doing things, the participants mentioned that they could not easily brainstorm as many ideas as possible and at the same time be able to use these many ideas to identify and focus on those that are most useful to their goal in one meeting. More so, they mentioned that reaching consensus earlier on requirements identified always seemed a night mare. In addition, they commended the technology tool that was used as it enabled respect for ideas from all and different participants, i.e. provided the ability to anonymously contribute. As a matter of fact, we hardly received suggestions for improving the process. The few comments suggested to us included adding more time to tasks that needed more discussions and reaching consensus, perhaps by doing these tasks in different separate sessions. We used these suggestions to refine the resulting CPMP process design that is visualised in appendix E.

## 6.3 Conclusions about the CPMP design

In the preceding sections, we have provided participants' feedback about the CPMP process. Based on this feedback, we conclude that the CPMP process offers organisations and their stakeholders an effective, useful and a systematic collaborative approach that they can use to develop satisfactory policies.

About the satisfaction with the CPMP process and process outcomes, we show results in table 6.11 as averages of averages for the above tables of the four respective cases. From the researchers' perspectives on these results, we generally conclude that the participants were reasonably satisfied with the CPMP process outcomes and the process by which the outcomes were derived.

The results show that the participants were more satisfied with the process outcomes compared to the process. The results further show that satisfaction levels, both with process and outcomes are higher for participants that have a personal interest in the process path, i.e. participants in cases 1, 3 & 4. This makes us conclude that the process can indeed enable stakeholders to work together towards achieving their goal. The high scores in the satisfaction with the process outcomes also make us to conclude that the process can indeed enable stakeholders to work together towards completing and accepting the results for goal achievement. These results also make us

Table 6.11: Averages of Satisfaction with process and outcome

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| **Satisfaction with process** | | | | |
| Average | 4.800 | 3.838 | 4.500 | 4.800 |
| Standard deviation | 1.376 | 0.995 | 1.366 | 1.053 |
| **Satisfaction with outcome** | | | | |
| Average | 5.160 | 4.363 | 5.367 | 5.486 |
| Standard deviation | 1.310 | 1.094 | 0.908 | 0.598 |

conclude that the CPMP process can enable stakeholders to obtain useful results/outcomes that give a better understanding of what issues they find vital to their organisational policies. We also conclude that the CPMP process provides a more interactive and better method/approach to developing policies.

For the reduction in cognitive load, we considered how well the participants understood the process tasks in terms of amount of effort they used to realise policies. The participants were able to execute the process with ease. The participants being able to follow the successive detailed process activities to realise a policy with ease makes us to conclude that the CPMP process provides a clear and easy to use procedure for stakeholders to achieve their goal. In other words, the process logical flow and the successive activities were communicative enough to ease the cognitive effort required by the participants to understand the process to be able to develop all the policy aspects. We base our conclusion on the fact that participants were able to execute the process and obtain results with minimal effort and difficulty. We experienced less to none questions of how to do things across all the four cases. The participants ease of understanding makes us to conclude that the process can indeed provide for shared understanding and meaning for all policy aspects for goal achievement. In addition, we also conclude that the patterns of collaboration 'clarify', 'evaluate' and 'consensus' used in the CPMP process enables shared meaning and understanding, and effective decision-making to arrive at satisfactory policy results.

Regarding the stakes accommodation and resources shared-base (information and knowledge sharing and usage) for goal achievement, we measured these constructs by how well the participants managed to come up with policies at the end of the process execution using this process. We used consensus voting results summarised in table 6.12 and the transcribed session data logs.

The consensus results above and the data logs show that the participants

Table 6.12: Voting consensus results

| | Yes | No |
|---|---|---|
| Case 1 | 4 (80%) | 1 (20%) |
| Case 2 | 12 (75%) | 4 (25%) |
| Case 3 | 5 (83%) | 1 (17%) |
| Case 4 | 5 (71%) | 2 (29%) |

were given equal opportunity to participate, contribute and give required resources for attainment of the resulting policies. Based on these results, we conclude that the CPMP gives stakeholders equal opportunity to contribute to the goal achievement. Our conclusion is based on the fact that all four cases were able to reach consensus on the resulting policy outcomes. In other words, the resulting policies were based on the stakes contributed, the information and knowledge shared and used by the participants during the sessions. This also makes us to conclude that the process can indeed provide forums for sharing information and knowledge among stakeholders to complete the policy and enable acceptance of the process results for goal achievement.

On the efficiency of the process, we considered the execution length in terms of time of each activity of the process and how well the participants managed to arrive at the process results using the resources that were availed to them. Regards the time allocations, after the first two sessions we re-allocated time to different activities depending on their intensity. In the last two sessions we hardly got complaints about time allocations. This makes us to conclude that the process was efficient in terms of time length. Also the fact that the participants managed to arrive at satisfactory process results using the available resources makes us to conclude that the process was efficient in terms of resources availed.

In addition to the pre-defined design criteria, the CPMP process has an added advantage of applicability to formulation of varying policy types. The applicability could be used to answer the collaborative need of a structured policy problem solving approach. In other words, with a single design of the CPMP, various policy types can be developed compared to the traditional way of doing things. In the traditional settings, when developing these 3 policy types, the stakeholders would need to follow different and given policy processes/procedures as we observed in our exploratory studies perspectives. The fact that our process was applied to 3 different policy types makes us to conclude that the CPMP process design is flexible, and can be instantiated

for varying policy needs/types.

Overall, we can conclude that the CPMP process was averagely successful across all the four cases. Based on the results above, the quality of the CPMP process design, in terms of its effectiveness, efficiency, stakes accommodation, shared resource availability, cognitive load reduction, and applicability/reusability proved to be satisfactory. As such, the CPMP process design/prescription has indeed the potential to support organisations in developing quality policies. In other words, it offers organisations and their stakeholders an effective, useful and a systematic collaborative approach that they can use to develop satisfactory policies.

From our observations and based on results in the above tables, we see that participants in cases 1, 3 & 4 were indeed able to formulate policies using the CPMP. These participants had interest in the process path, i.e. working from top to bottom and giving thorough attention to precise definitions and formulations. However, the participants in case-2 had not created policies before, but they still managed to arrive to their results using this process.

On the CPMP process execution procedure, we conclude that a session supported with collaborative technologies is able to perform much better than one that is not. This is reflected in case-4 session results. The participants in case-4 specially commended the efficiency of the process because of the process outcome, and their ability to generate many ideas during the creativity tasks in few minutes due to the support of the MeetingWorks software. This means that a collaboration process execution supported by the use of a GSS enables productive brainstorming and discussion more efficiently. This is consistent with some observations in GSS studies for policy making [Vreede and Bruijn, 1999, Herik, 1998].

About the thinkLets, we conclude that some thinkLets are more advantageous than others when it comes to facilitating accomplishment of a given process activity. This is reflected in particular thinkLets such as the 'DirectedBrainstorm' thinkLet and 'CouldBe-ShouldBe' thinkLet which enabled the ease of execution of the creativity tasks. For instance, during the idea generation activities, and using prompts from the facilitator, the participants were able to generate many ideas in relation to the process goal. The prompts stimulated the participants to think and contribute adequately. These prompts are in the 'DirectedBrainstorm' thinkLet. Also the fastFocus thinkLet was very useful in creating shared understanding and meaning of policy aspects among the participants as they were able to clarify on what they meant by their ideas before they could be considered as final. The respective participants' feedbacks from the questionnaires, formal and informal interviews in addition to our observations strengthen our conclusions.

# Chapter 7

# Epilogue

This research was concerned with the potential application of Collaboration Engineering (CE) to the field of Organisational Policy Making. In chapter 1 we described the organisational policy and policy making process (PMPs) including their characteristics and complexity/concerns. We analysed that PMPs were affected by several kinds of complexity among which some were of a collaborative nature. This research focused on the concerns that were of a collaborative nature. We therefore introduced the need for Collaboration Engineering (CE) as an approach that could meet these collaborative concerns. To better understand how the CE approach could address our research problem, we formulated the following research questions:

- What are the concerns that are of a collaborative nature in a policy making process (PMP)?
- What makes a good policy from a collaborative PMP effort?
- What design choices and assumptions/requirements of CE might follow from organisational policy making to derive a quality collaborative PMP design?
- How might CE aid in supporting to improve these requirements i.e. quality of the collaborative policy making processes and the resulting policies?

In order to answer our research questions, we defined the following research objective: to develop a design theory to guide the design of quality collaborative organisational policy making processes and the resulting policies from these processes, i.e. the design theory was to provide:

- The quality dimensions for a good policy from a collaborative policy making effort and methods for assessing these dimensions;
- The design choices and assumptions/requirements, in which the process design needed to be designed, executed and evaluated;
- The design object, i.e. a collaborative policy making process prescription.

**Understanding of and CE benefits to collaborative needs** – We presented the organisational stakeholders' collaborative needs and how they benefit from CE in chapter 4. The outcomes of CE benefits to PMPs collaborative needs illustrate the potential of CE to support improving organisational policy making. These benefits can be used to design heuristics that aid collaboration engineers in designing quality collaborative policy making processes to realise quality policies that are being decided on in these processes.

**Theory on 'good' policy** & **CPMP design quality dimensions** – We defined and presented the quality dimensions of policies from which we obtained a theory on a 'good' policy in chapter 5. The quality dimensions included policy acceptance, policy effectiveness, policy completeness, and shared understanding and meaning of policy elements.

In this same chapter 5, we presented the design choices according to which the CPMP process design needed to be designed, executed and evaluated. The design choices were derived from the theory on a 'good' policy. The design choices included a design that supports adequate accommodation of individual stakes to enable the acceptance and achievement of the policy goal, a design that supports the reduction in cognitive load to enable shared understanding and meaning of the policy elements to meet the policy intentions, a design that supports achieving the policy goal, and a design that supports shared resource availability for information and knowledge to permit policy aspects fulfilment. The CPMP process design was to be used to achieve a quality CPMP process and quality resulting policies.

**Requirements, designing** & **evaluation of CPMP design** – In chapter 6, we offered the requirements that we used to support the creation of the design dimensions for the CPMP process design. In the same chapter 6, we offered a CPMP process design/prescription (design object) that organisations and their stakeholders could use to develop policies. We also evaluated this process design and found out that the

CPMP offers organisations and their stakeholders an effective, useful and a systematic collaborative policy making process that they can use to develop quality policies.

**Research approach** – In chapter 2, we described the research strategy and research instruments we used to answer the research questions, to develop the theory, and to evaluate the process design method i.e. CE design approach. We performed an explanatory and exploratory research study to report on strategies that could help determine and improve the quality of collaborative policy making processes and the policies being decided on. Case studies were carried out with three organisations namely Ministry of Finance, Planning and Economic Development (MOFPED), Action-aid Uganda, and Population Services. Following an inductive-hypothetic research approach, we determined the collaborative needs for organisational policy making processes that could be met by CE, the quality dimensions for the resulting policies, the design choices that we used to design the quality CPMP process design, and the testing of the CPMP prescription.

The new approach i.e. the CE collaboration process prescription for organisational policy making (CPMP) was adapted based on conclusions drawn from observing the four cases (MOFPED and NSSF in Uganda, RUN students and CIM department in the Netherlands, respectively) we performed in pursuit of the CPMP validation and implementation. We used the case study, design science and action research instruments in a circular form to support the inductive theory building and testing in this research. We chose these instruments because of their advantages/strengths as explained in chapter 2; yet we also summed up the instruments' weaknesses, and analysed their influence to conducting our research. This makes us conclude that we followed a systematic research approach or so to say that our research was complete.

**The CE design approach** – Given the research perspective, this research study consciously followed the CE design approach as described in chapter 3. CE is a design approach to designing, and deploying collaboration processes for recurring high-value collaborative tasks that are executed by practitioners without the ongoing intervention of professional facilitators [Vreede and Briggs, 2005]. In this research, the mission-critical task that we focused on for improvement involved developing of organisational policies since they address recurring policy problems, and the collaboration process for the mission-critical task was the collaborative policy making process (CPMP).

The experiences during the research study validate the applicability of the CE design approach steps. For instance, in the task-thinkLet match step, we used the thinkLets to support the collaboration among groups of participants that were involved in the CPMP execution towards achieving their goal. The thinkLets did this in such a way that they eased communication and created particular dynamism within the 4 cases sessions' participating groups, stimulated these participants to give the required resources e.g. knowledge, information and joint effort etc, during execution of the various tasks and permitted the flexibility of the CPMP process. We also used the thinkLets to document the CPMP process prescription. In our validation of the CPMP process, we found out that certain thinkLets were more advantageous than others, such as the 'DirectedBrainstorm' thinkLet and 'CouldBe-ShouldBe' thinkLet enabled the ease of execution of the creativity tasks and giving of resources such as information and knowledge while the FastFocus thinkLet was also very useful in creating shared understanding and meaning of policy aspects among the participating groups (see chapter 6).

Nevertheless, the experiences with the CE design approach also stress the need for iteration and incremental steps during the design of repeatable collaboration processes. For instance, the CPMP underwent four iterations prior to deriving the final process visualised in appendix E. This means that depending on the problem situation at hand, the CE design approach indeed does accommodate iteration. In addition, the action research approach i.e. Zuber-Skerritt [1991]'s research instrument used in pursuit of our CPMP implementation and validation proves to be harmonious with the CE design process nature. In other words, it is almost difficult to get a repeatable collaboration process 'correctly' the first time.

All in all, in adopting the CE design approach, it offers benefits to the collaborative needs of organisational policy making processes as discussed in chapter 4, and therewith offers a CPMP process prescription that can be used by organisations to develop quality policies as seen in chapter 6. As such, we conclude that the CE approach indeed supports improvement of organisational policy making.

In this chapter, we will further reflect on what our research means for organisations that aim to develop policies. First, we will discuss the new approach (CPMP process design) to organisational policy making, then the overall research contributions and their applicability, and finally present suggestions for future research.

## 7.1 The CPMP design: a new approach

In this thesis, we looked at improving organisational policy making processes and the policies made in these processes using CE. As discussed in chapter 1, policy making is frequently done in organisations to address recurring policy problems. It involves three broad collaborative activities: problem definition; solution proposals and a consensus-based selection of the line of action to take. Because of its nature, and given the fact that organisations do lack a structured process to follow in addressing the recurring policy problems, they intend to incur many resources in order to develop their policies. To this end, in assisting organisations with this problem i.e. reducing on high investments incurred, we chose to address the constraints that were of a collaborative nature in a policy creation process and we claimed could be met by CE. The collaborative concerns implied the need to have a structured collaboration process, i.e. a well-defined process specification with several choices depending on the context/situation in which a policy needed to be specified, that would be referred to when making policies.

Additionally, addressing the collaborative concerns would also help organisations gain value out of their investment. In chapters 4, 5 and 6, we presented and described how the CE approach was used to support the improvement of organisational policy making processes and the resulting policies. In order to conclude whether the CPMP process design indeed improves the organisational policy making processes and the resulting policies, we will further reflect on the quality design dimensions. As discussed in chapter 1, we argued that achieving a quality organisational policy making process and quality policies depended on a quality process design.

- **Stakes accommodation** – during the CPMP process execution, various participants had the opportunity to get familiar with other participants' suggestions and ideas. This means that the CPMP process design facilitates awareness of each stakeholder participant's desired policy aspects i.e. accommodates the expression of preferences by stakeholders. The awareness is moreover enhanced by permitting participants to argue the priority with which key policy aspects are most important to the resulting policy. With prioritised policy results, organisational stakeholders are able to understand which policy action items will be of high priority over others.

- **Cognitive load reduction** – because the CPMP facilitates the accommodation of preferences; when these individual preferences are combined through clarification and discussion, all stakeholders can easily observe areas that need adequate consensus. This means that the

CPMP process design facilitates cognitive load reduction through clarification and discussion, and as such facilitates consensus building and shared understanding among a group of participating stakeholders.

- **Shared resource availability** – as stated above, the CPMP facilitates the accommodation of stakeholders' preferences; when their individual preferences are accommodated, all stakeholders are more easily stimulated or inspired to give or share the required resources such as knowledge, information and effort towards achieving a group goal. This means that the CPMP facilitates sharing and committing of available resources among participating stakeholders for goal achievement.

- **Goal achievement** – as stated above, the CPMP facilitates accommodation of stakeholders' preferences, cognitive load reduction, and shared resource availability; when all these factors are combined the stakeholders are able to work towards achieving a group goal. In other words, the CPMP facilitates goal achievement.

Stakeholder involvement, stakes accommodation, sharing of available resources, joint effort, shared understanding and consensus are essential to the success of collaborative policy making effort, i.e. arriving at acceptable policy results (good policies). Unfortunately, based on results from our exploratory studies (see chapter 4) organising all these aspects in the traditional policy making setup to achieve acceptable results is challenging and hardly happens. This research presents a CPMP process design that was developed and evaluated in a series of workshops. The discussion on the abovementioned quality dimensions and the results from its evaluation show that the CPMP process design takes care of the collaborative needs and characteristics for organisational policy making. That is, it facilitates stakeholders' involvement, interdependency and accommodation, group dynamics such as sharing of information and knowledge resources, focusing attention and joint effort towards a group goal, shared understanding, consensus and completeness of the policies for goal achievement.

Furthermore, based on the evidence from the cases (see chapter 6, table 6.11), the stakeholders reported substantial levels of satisfaction with the CPMP process outcomes and that the workshops appeared to be successful. Their feedback indicated that they were satisfied and considered the workshops to be very useful. The stakeholders in all workshops liked working with the process. For example, most positive comments received from the workshops included "the results are useful for me, because they give me a better understanding of the things users of the policy find important", "the process can be very useful for my work; trying to formulate issues about a

variety of subjects and with different groups of people", "I liked the process because it forces you in a direction in which you are obliged to perform some actions in a specified order".

The evidence from the cases further shows that the different stakeholders had various affirmative experiences with the CPMP as compared to the old way of doing things.

The different stakeholders liked the fact that they were actively involved and able to formulate ideas about a variety of subjects with different people and working towards achieving a common goal, in a short time as compared to the time spans in their own traditional settings. For example in case-4, they liked the fact that the CPMP enabled the students and the CIM officers to work together. Also, for instance in case-2, the student stakeholders mentioned that they had the opportunity to work together in a big group on an assignment, which they had never experienced before. The students mentioned that the CPMP enabled them to get familiar with other students' suggestions and requests about their student information portal.

Another example is on all the four cases in which the different stakeholders had the opportunity to get acquainted with other stakeholders' suggestions and requests. Such opportunities were experienced during the brainstorming, reducing and clarifying of their ideas. The stakeholders mentioned that during the convergence activities, they were able to discuss and arrive at a joint understanding of key policy issues.

The stakeholders also mentioned that the brainstorming and clarifying on their ideas facilitated awareness of each stakeholder's desired policy aspect for the resulting policy. They felt empowered as they had been able to share all feedback that they considered relevant and crucial. In their traditional way of doing things, the different stakeholders mentioned that they could not easily brainstorm as many ideas as possible and at the same time are able to use these many ideas to identify and focus on those that are most useful to their goal in one meeting.

More so, the stakeholders mentioned that reaching consensus earlier on requirements identified always seemed a night mare in their traditional way of doing things.

Based on the evidence from the cases, the CPMP process enables active involvement of different stakeholders and to solicit their input and to build consensus through discussions. Therefore, over all we conclude that the CPMP prescription indeed can be used to improve policy making processes and the resulting policies. As such, the CPMP prescription works for organisations and their stakeholders in terms of supporting to develop quality policies.

## 7.2 Applicability and implications of research

In this research we offered a theoretical and practical basis to guide the improvement of organisational policy making processes and the resulting policies. We begin by reflecting on the applicability of the Collaboration Engineering (CE) approach in general. The CE approach as seen in chapter 3 focuses on high-value tasks [Vreede and Briggs, 2005]; thus organisations and their stakeholders will derive maximum benefit from improvements to their highest-value tasks in this case organisational collaborative policy making than from improvements to their lower value tasks. Better still, CE will seek to bring the value of facilitated interventions to organisations and their stakeholders that do not have access to facilitation through the created repeatable collaborative policy making process. Likewise, the CE designed repeatable CPMP process has the possibility of creating intellectual capital for organisations and their stakeholders.

We further demonstrate the CE approach applicability in the three main ***contributions*** of this research. First, we offer a theory which does not only explain an understanding of what makes (quality of) a good policy from a collaborative policy making effort, but also gives an understanding of a quality CPMP process design. Second, we offer the quality design dimensions for the CPMP process design that can be used for its designing, execution and evaluation to derive a quality collaborative policy making process. Third and last, we offer a validated CPMP process design object that can be used to support improving a quality organisational collaborative policy making process and developing quality organisational policies. Following is an explanation of the implications of each of the contribution.

1. **Theory on 'good' policies** – The first contribution of this research is the theory on good policies. This theory offers useful metrics that can be used by organisations and their stakeholders to define high quality policies from their collaborative policy meeting efforts. That is, these metrics can enable stakeholders to work towards producing policies that are acceptable and supported by all, useful and effective to address their policy problems, complete and understood by all. In addition, this theory also enabled us to derive design choices that can be used to design a quality CPMP process design. The design choices can be used as evaluation metrics that can enable organisations and their stakeholders to assess a quality collaborative policy making process that they can use to realise quality policies.

2. **CPMP process design quality dimensions** – The second contribution is the CPMP process design quality dimensions. These dimensions

can be used as a basis for organisations and their stakeholders to derive a quality collaborative policy making process (in terms of its execution and evaluation) that they can use to develop quality policies. In other words, the CPMP process design quality dimensions are useful to organisations because they can be used to evaluate the success of the designed collaboration process. Because CE involves the designing of recurring collaboration processes that are meant to cause predictability and success among organisations' recurring mission-critical collaborative tasks, the evaluation of the designed collaboration processes is vital to realising their success. This means that in evaluating the CPMP process design, organisations and their stakeholders are able to achieve several benefits. The first is maximising the focus of purposeful effort in terms of jointly producing quality policies.

The second is to evaluate return on investment in terms of reduction on new investments on e.g. usage of new and different processes each time a policy needs to be developed, which may require new and many resources and employing of professional facilitators to guide developing of effective policies. Thirdly, improve a process design to support continuous improvement of the collaborative policy making process. Fourth, create substantial value for the organisation in terms of reducing on substantial loss or risk. Lastly, reduce the complexity of the problem-solving process in terms of having one structured collaboration process that is referred to each time a policy needs to be developed.

Specifically, the CPMP process design quality dimensions not only present metrics for achieving quality performance, but also offer methods moreover operationalised for assessing quality outcomes of the CPMP process prescription. In other words these quality dimensions can be regarded as evaluation techniques that can be used by organisations and their stakeholders to benchmark and perform an assessment of their collaboration intervention, thus supporting continuous improvement of their collaborative policy making process and the resulting policies.

3. **CPMP process design object** – The last contribution was the designing and validation of a CPMP process design object. The CPMP process design object should provide several benefits to the organisations and their stakeholders. First, the CPMP process design can be used to provide systematic and successive steps (a process prescription) for policy making that organisations and their stakeholders can use/follow to develop policies. The CPMP has three main futures.

The first one is that it moves the policy stakeholders from identifying a policy goal and objectives (that address a defined policy problem) to deciding on policy solutions in terms of policy elements and their implications. Nevertheless, a policy stakeholder can also decide to start the process in the policy objectives identification phase if the policy goals are defined beforehand, or the policy elements phase if the policy goal and objectives are defined before hand. The second one is that all the three phases move the policy stakeholders from brainstorming to clearly defining key policy aspects, i.e. goals, objectives, policy elements and their implications. The third one is that in all the three phases, the policy stakeholders have the possibility to not only identify key policy issues, but also prioritise them. This enables the policy stakeholders to walk away with a prioritised 'to-do' policy document.

Secondly, since policy making is a routine task in organisations, stakeholders can always use the CPMP as part of their work practice in developing policies for their organisations. With a single design of a recurring collaborative policy making process in place it will be of high-value to the organisations. In other words, organisations will accrue revenue in terms of reduction in investing in new resources and following new different processes each time they will need to develop policies that address recurring policy problems. With a single design, more policy types can be developed, i.e. the same design can be customised to develop different policy types; more people can be trained on using this process, therefore lessening the idea of relying on and paying highly external experts or facilitators in guiding to develop policies. More so, the same process can be executed for different teams of the same organisation. To this end, collaborative policy making is a high-value task that needs to be transferred as a work practice to practitioners in organisations. However, in this research we limited our scope to the design and not transfer of the CPMP to organisations. This means we need to make the CPMP transferable to organisations. The transferability of the CPMP to organisations is further discussed in the future research section.

## 7.3 Limitations and future research

In this research we looked at how to improve organisational policy making using the CE approach. We developed, applied, evaluated and modified our design approach (see research objective in chapter 1) that we used to facilitate improvement of organisational policy making processes and the

resulting policies. We have reflected on what we learned from this research in the preceding sections. In this section we outline areas that we look forward to being the focus of future research efforts.

Using the Collaboration Engineering approach overview presented in chapter 3, it is clear that this approach has four broad distinctive phases i.e. identifying best practices for a given task that a group needs to execute, designing the prototype collaboration process using best practices, executing and refining the prototype collaboration process in a number of pilots and organisational roll-out of the final process. In this research, we did not address part of the organisational roll-out i.e. the transfer and deployment of the CPMP to practitioners and organisations. Performing all these phases was not viable due to the limited timeframe in which this research was done. In the previous section we reflected on the benefits of having the collaboration process transferred and deployed in organisations. As such, we suggest further studies on making the CPMP transferable to organisations so that stakeholders can fully enjoy the benefits of the CPMP. We also suggest further evaluation of the CPMP when it is transferred to organisations to scrutinise if it indeed offers the above benefits to organisations.

Another limitation is that the CPMP process prescription in this research offers only process activities for the policy making process that can be executed by stakeholders in order to produce an acceptable policy result. That is, the CPMP process prescription takes care of a pre-used policy. We therefore suggest studying the CPMP prescription to scrutinise if it indeed can enable organisations and their stakeholders to fulfil other policy cycle phases such as the problem definition, policy implementation, policy evaluation and policy change. Otherwise we suggest designing an all encompassing CPMP that accommodates all the policy making cycle phases.

In addition to the above limitation about the CPMP process prescription, in this research we used the generic and not the modular process design due to a number of factors as discussed in chapter 6. In this same chapter 6, we discussed the advantages of the modular process design. We therefore suggest empirical validation of the modular CPMP process design to scrutinise if indeed it provides a better approach to effective and efficient organisational policy making.

Although the thinkLets we used in this research enabled us to achieve our goal, i.e. designing and documenting the CPMP process prescription that can be used to develop policies, we suggest further empirical validation of the CPMP with more organisations and more policy making stakeholders to establish thinkLets that can be most appropriate to such complex problem-solving processes.

Finally, while meaningful work on possible strategies and measurements

for quality policies and the CPMP process design has been made in this research, we suggest further empirical evaluation of their relation i.e. between the quality of policies and the quality of the CPMP process design with more organisations and more policy making stakeholders to strengthen our observations. With respect to the theory on a good policy, further empirical validation with more organisations and more stakeholders is required to scrutinise if the quality dimensions identified in this research indeed define quality policies. Regarding the collaborative concerns (see chapter 4), we suggest additional identification of such concerns to exhaust the list. For instance, a collaborative concern key to organisational PMPs is the lack of commitment from participating stakeholders. With commitment, the key stakeholders can be able to align future efforts and goals [Kolfschoten, 2007]. The additional collaborative concerns/needs can be used as heuristics that can further aid collaboration engineers in improving the designed CPMP process.

# Appendix A

# Exploratory Study Interview Instrument

This appendix illustrates the purpose of, and interview questions that we used in the exploratory studies in the case study organisations.

| **Background and purpose of exploratory study** |
| --- |
| Our research is concerned with the potential application of Collaboration Engineering (CE) to the field of organisational policy making. We believe that CE will lead to improved policy making processes (PMPs). Policy making involves several actors with divergent interests, though a policy can only be realised on the basis of collaboration. In our context we describe collaboration as making joint effort towards achieving a goal, regardless of the means (democratic or dictatorial) of realising the policy. As a result of collaborative effort, organisations are able to create substantial value for their stakeholders. To maximise the focus of purposeful collaborative effort, we turn to the CE approach which involves the designing of collaborative work practices for high-value recurring tasks, and deploying those designs for practitioners to execute for themselves without ongoing support from professional facilitators. However, the analysis to realise a 'good' policy in a collaborative PMP effort poses interesting challenges: what is a 'good' policy? What role plays collaboration in creating good policies? This research therefore aims to develop a theory to improve the quality of policies and the collaborative policy making processes. To achieve this aim, one of the most important activities is to establish reference knowledge on the policy making domain. We would like to carryout an explanatory and exploratory study through discussions/interviews. This study is meant to contribute to our understanding of the PMP domain. Because you have been identified as one of the subject experts, we kindly request you to participate in this study. |
| 1. How would you define or describe an organisational policy? Or what is an organisational policy in your case perspective?<br><br>2. How would you describe an organisational policy making process? Or what is an organisational policy making process in your case perspective?<br><br>3. In your perspective, what would you consider as organisational policy making?<br><br>4. At what level of business is organisational policy making done in your organisation?<br><br>5. What would make organisational policies to happen in your organisation? Or in your perspective what would facilitate development of policy (policy innovation) in your organisation?<br><br>6. In your perspective, what would u consider as key characteristics of organisational policy making processes of your organisation? |

7. What would you consider as key requirements for effective organisational policy making processes for your organisation?

8. What would you consider as key deliverables of organisational policy making processes for your organisation?

9. In your perspective, what would you consider as key qualities of these deliverables of organisational policy making processes?

10. Based on your perceptions above, what are the key challenges that you think would influence successful organisational policy making processes in your organisation; and what would you recommend to be done?

11. What would you consider as a quality organisational policy outcome? Or what would make you agree on a policy? Or what would you consider as key factors behind determining a quality (good) policy for your organisation?

12. What would you consider as a quality organisational policy making process for your organisation? Or what would make a quality policy process design in your perspective?

13. In your organisation, what type of policy making process model do you follow/use when designing the organisational policy? I.e. Linear/sequential or iterative interactive models, and why?

# Appendix B

# Evaluation Interview Instrument

In this appendix, we illustrate the open-ended questions that we used for the formal interviews we conducted when evaluating the CPMP.

| |
|---|
| What did you like about this process? |
| What did you not like about this process? |
| Please comment on the usefulness of the results/outcomes of today's session |
| Suppose this process had to be repeated next week with a different group. How would you like to see it done differently? |
| What would have been necessary to happen/be done differently to enable a higher 'YES' score on the final Policy document? |
| Please add any other comments that you may have |

# Appendix C

# Evaluation Questionnaire

In this appendix, we illustrate the questionnaire instrument that participants filled out about their satisfaction with the CPMP and its outcomes.

| | 1=Much Less | | 7=Much More |
|---|---|---|---|
| 1. I got (less/more) from the meeting than I had anticipated. | | | |
| 2. I benefited (less/more) from this meeting than I expected. | | | |
| 3. The meeting did (less/more) good for me than I thought it would. | | | |
| 4. I gained (less/more) from the meeting than I believed I would. | | | |
| 5. The meeting made it (less/more) likely that I would attain something I want. | | | |
| 6. Because of the meeting, I am (less/more) likely to succeed on something I care about. | | | |
| 7. I am (less/more) likely to attain my goals because of this meeting. | | | |
| 8. Due to this meeting I am (less/more) likely to get what I want. | | | |
| | **1=Strongly Disagree** | **4=Neutral** | **7=Strongly Agree** |
| 9. I feel satisfied with the way in which today's meeting was conducted. | | | |
| 10. I feel good about today's meeting process. | | | |
| 11. I liked the way the meeting progressed today. | | | |
| 12. I feel satisfied with the procedures used in today's meeting. | | | |
| 13. I feel satisfied about the way we carried out the activities in today's meeting. | | | |
| | **1=Strongly Disagree** | **4=Neutral** | **7=Strongly Agree** |
| 14. I liked the outcome of today's meeting. | | | |
| 15. I feel satisfied with the things we achieved in today's meeting. | | | |
| 16. When the meeting was over, I felt satisfied with the results. | | | |
| 17. Our accomplishments today give me a feeling of satisfaction. | | | |
| 18. I am happy with the results of today's meeting. | | | |

19. How many years of full-time work experience do you have? _____

20. How old are you? _____ 21. Sex: Male Female

# Appendix D

# Workshop Agenda

This appendix illustrates a broad agenda that we used in the CPMP execution workshops. Note, the agenda was always adjusted to suit each workshop.

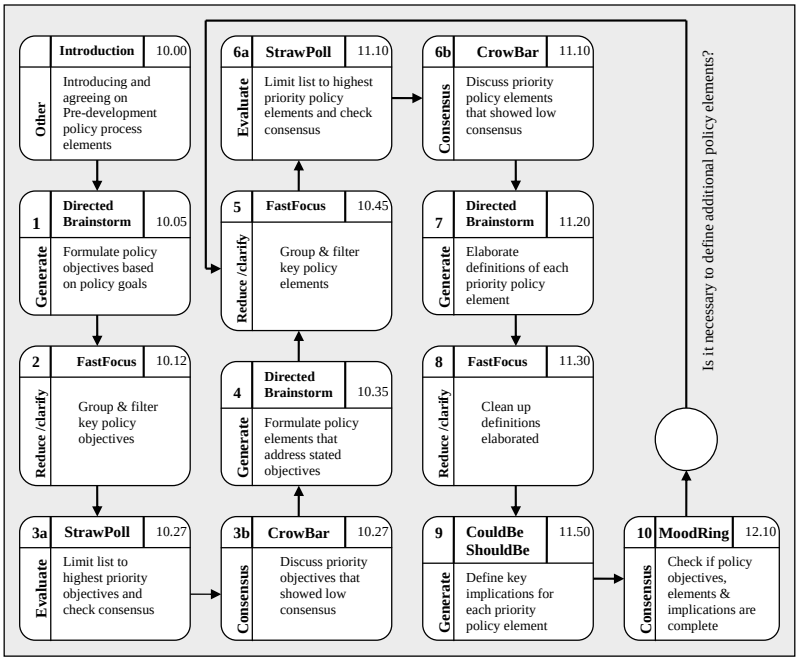
| No. | Task | Questions/ Assignments | Deliverable(s) | ThinkLet & Pattern | Time |
|---|---|---|---|---|---|
| | Introduction (participants, session goal, program, procedure, and scope) | *Goal*: to address an IT organisational policy problem through development of an IT policy<br>*Deliverable*: an organisational IT policy document | Commitment to the goal, and knowing each other | | 10.00 |
| 1 | Formulate policy objectives based on policy goals | Please list all objectives that you think would be relevant for the intended policy | A list of policy objectives | DirectedBrainstorm<br>*Generate* | 10.05 |
| 2 | Group and filter key objectives | Please organise the list by extracting only the objectives that you feel are key to the policy | A cleaned set of key grouped (and aggregated) objectives | FastFocus<br>*Reduce* & *Clarify* | 10.12 |
| 3 | Prioritise key objectives | Please limit list to the highest priority objectives using a 3 point scale and check consensus | A list of high priority key policy objectives | StrawPoll<br>*Evaluate*<br>CrowBar<br>*Build Consensus* | 10.27 |
| 4 | Formulate candidate policy elements that address the stated objectives | Please list all policy elements that you think would be relevant for the policy | A list of candidate policy elements | DirectedBrainstorm<br>*Generate* | 10.35 |
| 5 | Group and filter key policy elements | Please organise the list by extracting only the policy elements you feel are key to the objectives | A cleaned set of key grouped (and aggregated) policy elements | FastFocus<br>*Reduce* & *Clarify* | 10.45 |
| | **Break** | | | | 11.05 |
| 6 | Prioritise key policy elements | Please limit list to the highest priority policy elements using a 4 point scale and check consensus | A list of high priority key policy elements | StrawPoll<br>*Evaluate*<br>CrowBar<br>*Build Consensus* | 11.10 |
| 7 | Elaborate definitions of each priority policy elements | Please gather descriptions that you think would define each priority policy element | A list of priority policy element definitions | DirectedBrainstorm<br>*Generate* | 11.20 |
| 8 | Clean up definitions elaborated above | Please clean up definitions of each priority policy element | A cleaned list of policy elements definitions | FastFocus<br>*Reduce* & *Clarify* | 11.30 |
| 9 | Define key intended implications for each priority policy element | What implications could you consider as appropriate for each of the priority policy element? From the above list, what implications should we take as key to each priority policy element? | A list of positive & negative implications for each policy element | CouldBeShouldBe<br>*Generate* | 11.50 |
| 10 | Check if policy objectives, elements & implications are complete | Please reach consensus by the Yes/No vote | An agreed upon policy document that meets the desired end states | MoodRing<br>*Build Consensus* | 12.10 |
| | **Wrap up** | | | | 12.15 |

# Appendix E

# CPMP Process Prescription

In this appendix, we provide the CPMP prescription, that also includes the facilitation process model, the assumptions and its script.

**CPMP Facilitation Process Model**




**Assumptions for the CPMP process prescription**

This is an example of the assumptions. We used these assumptions in the NSSF case organisation. The ***goal*** of this session is to develop a security policy that guards against IT security breaches in your organisation. The ***scope*** of the session is to define the policy objectives and policy elements with their implications that address the stated policy goals predefined. This means we are only catering for a pre-use policy and not a used policy. You will be required to evaluate the policy objectives and policy elements using a 3 and 4 point scale criteria respectively to determine those that are most priority to the policy. For the prioritised policy elements you will be required to elaborate on each of them i.e. define what each means as well as elaborate their positive and negative implications. A key ***deliverable*** from this session is a security policy document on 'Guarding against IT Security Breaches'. Particularly, the policy document should articulate the policy objectives, policy elements i.e. guidelines, rules and their implications of how to guard against breaching of IT security.

We assume that as the participants you are aware, understand and familiar with the predefined policy problem and policy goals for which you are going to define policy objectives and policy elements. We also assume that you have the relevant information and knowledge needed to accomplish the task. We will perform the session following a manual procedure that entails using MSWord, pens, pencils and paper. The session will take place in two hours and we shall have a break of 5 minutes due to the long task we have before us. You are only 6 participants and we hope you can come up with good policy objectives and policy elements that the rest of your organisation can easily understand, interpret and make use of.

**Script**

**Introduction**

1. "The goal of our meeting is to come up with policy objectives and policy elements with their implications. The results from this meeting when put together should enable to constitute a final policy whose goal is to guard against breaching IT security in your organisation".
2. "Given the goal of our meeting today, together we would like to formulate policy objectives and policy elements to fulfil this goal in order to solve the issue at hand"
3. "We will use MSWord first to type our ideas; then the chauffer will pick these ideas from each participant's machine using a removable disk; and these will be displayed on one central machine for discussion and cleaning up. For the evaluation of the ideas we will use a given criteria, and each participant will use their machine and again the results will be picked by the chauffer for public displaying. For the consensus we will use voting sheets/papers, pens and pencils"
4. "Since developing a policy is an interactive, consultative and iterative meeting process, we start by first familiarising with the policy aspects that were already pre-developed. This should take us about 5 minutes. The pre-development aspects include:-
    a. the predefined policy problem;
    b. the relevant information to be used to develop the organisational policy;
    c. a legal framework to support the policy to be developed the ownership of the policy

**DirectedBrainstorm**

5. "Now that we have consensus on the above pre-development elements, we will then proceed with the actual development of the principles. The first task involves identification and agreeing on policy objectives"
    a Put up SLIDE …
6. "For each participant on a station, you are requested to brainstorm the objectives for the intended policy"
    a. "First, enter all the objectives that you think would be relevant for the principles"
    b. Prompt: "think about three most important mission objectives that suit the policy" OR "what objectives would stakeholders see this policy achieve? please list the three most important ones"
        i. "Using MS Word, and on an empty page, type 3 possible ideas of policy objectives, while submitting them to the chauffer. These will be displayed on a brainstorm public list for cleaning up "
        ii. "You can edit or delete ideas on your page; when ready, submit them to the chauffer for public displaying"
    c. "Does anyone have any questions or comments?"
    d. "We'll spend about 7 minutes on this"
    e. "Observe the atmosphere to clarify if participants do understand the task by doing what is required, which will determine moving to our next step"
    f. "Is everyone ready to move on to the next task?"

**FastFocus**

7. "We're now going to clean up the list"
    a. Put up SLIDES … & …
    b. Put up MS Word Brainstormed Public List
    c. "Looking at the list in front of you, we will organise it by extracting only the objectives that you feel are Key to the stakeholders. We will do this by grouping and filtering objectives and eliminating any redundancies"
    d. "Then reframe the extracted Key objectives in a few words. Check whether the phrasing suits its intention appropriately. We will assign references to the policy objectives for ease of identification (the references are to be put in brackets) "
        i. "Here's a sample of what we're looking for"
        ii. Put up SLIDE …
        iii. "Please read the screen in front of you, and tell me the single most important idea represented in the discussion that should be included on the cleaned public list. We now select 6 key mission objectives"
        iv. "We now reframe each extracted key mission objective into a few words (final statement) and each of these will be assigned a reference number to ease the next task"
    e. "We will also crosscheck to see if there is any important issue (objective) that has not yet been posted on the public list"
        i. "During this time, we will discuss, condense, and add all our issues to the public list"
        ii. "This exercise will continue for the next 15 minutes until we all realise that nobody can find any important issues to add to the cleaned public list"
    f. "Is everyone ready to move on to the next task?"

**StrawPoll/CrowBar**

8. "We are now going to identify and prioritise the key objectives. We will do this by limiting the list to the highest priority objectives using the rating scale of 3 points (1 – high priority, 2 – important, and 3 – unnecessary) and check consensus. We will discuss about objectives that have a low consensus. The rest will be kept in our database"
    a. Put up SLIDE …
    b. "Please don't rate an objective that you are not sure of where it belongs"
    c. "We will take about 8 minutes for this exercise"

**DirectedBrainstorm**

9. "Now that we have consensus on the priority key objectives, we will then proceed with the second task of developing the policy elements and implications. This involves formulating policy elements, their definitions and intended implications that address the stated policy objectives. We will look at the referenced policy objectives to ease our assignment"
    a. Put up SLIDE …
10. "For each participant on a station, you are requested to formulate candidate policy elements that address the stated objectives. We will do this by matching each policy element gathered to a/the policy objective(s) it addresses. Please use the reference numbers on each objective displayed in front of you"
    a. "First, enter all the policy elements that you think would address the stated objectives"
    b. Prompt: "think about five most important policy elements that suit the policy" OR "what policy elements can we use to address the stated policy objectives? please list the five most important ones"

i. "On an empty page, each participant should type 5 ideas (possible policy elements) while submitting them to the chauffer. Make sure that each policy element you identify matches/addresses a stated policy objective. These will be displayed on a brainstorm public list for cleaning up"
ii. "You can edit or delete ideas on your page; when ready, submit them to the chauffer for public displaying"

b. "Keep entering policy elements until you feel that you've got them adequately covered"
i. "Here's a sample of what we're looking for"
ii. Put up SLIDE …

c. "Does anyone have any questions or comments?"
d. "We'll spend about 10 minutes on this"
e. "Observe the atmosphere to clarify if participants do understand the task by doing what is required, which will determine moving to our next step"
f. "Is everyone ready to move on to the next task?"

**FastFocus**

11. "We're now going to clean up the list"
    a. Put up SLIDE …
    b. Put up MS Word Brainstormed Public List
    c. "Looking at the list in front of you, we will organise it by extracting only 8 policy elements that you feel are Key to and address the policy objectives. We will do this by grouping and filtering key policy elements and eliminating any redundancies"
    d. "Then reframe the extracted key policy elements in a few words. Check whether the phrasing suits its intention appropriately"
        i. "Here's a sample of what we're looking for"
        ii. Put up SLIDES … & …
    e. "We will also crosscheck to see if there is any important issue (policy element) that has not yet been posted on the cleaned public list "
        i. "During this time, we will discuss, condense, and add all our issues to the public list"
        ii. "This exercise will continue for the next 20 minutes until we all realise that nobody can find any important issues to add to the cleaned public list"
    f. "Is everyone ready to move on to the next task?"

**Break**

12. After this task, we will have a break for strictly 5 minutes and then return to our stations and continue with the rest of the tasks until we realise our goal.

**StrawPoll/CrowBar**

13. "We are now going to identify and prioritise the key policy elements. We will do this by limiting the list to the highest priority policy elements using the rating scale of 4 points (1 – must have, 2 – should have, 3 – could have, and 4 – would-like to have) and check consensus. We will discuss about policy elements that have a low consensus. The rest will be kept in our database"
    a. Put up SLIDE …
    b. "We will take about 10 minutes for this exercise"
    c. "The prioritised policy elements will be displayed on the Public list"

**DirectedBrainstorm**

14. "In groups of 2 people per station, you are requested to elaborate (define) each of the priority policy elements"
    i) "First, enter all the descriptions that you think would define each priority policy element. You can edit or delete ideas on your page; when ready, submit them to the chauffer for public displaying and then for cleaning up.
    ii) "Here's a sample of what we're looking for"
    iii) Put up SLIDE …
    b) "Does anyone have any questions or comments?"
    c) "We'll spend about 10 minutes on this"
    d) "Observe the atmosphere to clarify if participants do understand the task by doing what is required, which will determine moving to our next step"
    e) "Is everyone ready to move on to the next task?"

**FastFocus**

15. "We're now going to clean up the list"
    a) Put up SLIDE …
    b) Put up MS Word Brainstormed Public List
    c) "Looking at the list in front of you, we will organise it by extracting only common definitions of each policy element. We will do this by grouping and filtering definitions that are relevant and appropriate to each policy element and eliminating any redundancies"
    d) "Then reframe the extracted definitions in a few words. Check whether the phrasing/definitions suits the policy element appropriately"
        i) "Here's a sample of what we're looking for"
        ii) Put up SLIDES … & …
        iii) "This exercise will continue for the next 20 minutes until we all realise that nobody can find any important issues to add to the cleaned public list"
    e) "Is everyone ready to move on to the next task?"

**CouldBeShouldBe**

16. "We will now define intended implications for each prioritised policy element"
    a) Put up SLIDES …, … & …
    b) "Looking at the screen in front of you with the priority policy elements identified, what implications (terms) could you consider as appropriate for each of them? Please brainstorm at least 4 terms for each policy element"
    c) "We have just spent a couple of minutes brainstorming about what implications (terms) could be considered appropriate for each policy element. Looking at the screen in front of you, would any body like to propose an implication (term) that we should take as key to each priority policy element? "
    d) "We will continue with this exercise until we define all the key implications (terms) for each priority policy element"
    e) "We will do this for 20 minutes"
    f) "We will now move on to the next task"

**MoodRing**

17. We will now look at the final suggested priority policy objectives, policy elements and respective implications to check if they are complete i.e. meet the desired policy goals. We will do this by consensus following the YES/NO vote"
    a) SEE SLIDE …
    b) "Looking at the screen in front of you with the objectives, policy elements (with their definitions and respective implications), vote Yes – if the above policy aspects meet the desired end states and NO – if do not meet the desired end states, need to be addressed. If you have any clarifying questions about them, please raise your hand"
    c) "We will have a verbal discussion to address any issues raised"
    d) "We will keep talking until we have reached some sort of consensus on the final policy document".
    e) "We will spend 10 minutes on this"

**Wrap-up**

18. It looks like we have successfully completed this project!
19. Please fill out the survey questionnaire and the interview sheet that are being handed out.
20. If you have some time, we would greatly appreciate you staying around and answering a few more informal questions about the process and the session at large.
21. Again, thank you for your time; we appreciate your participation in today's session.

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# Summary

Policies are a key requirement for successful organisational decision-making [Robbins and Coulter, 1996, Robbins et al., 1997, Ford and Spellacy, 2005, DECS, 2008]. We define a policy as a guide that establishes parameters for making decisions [Robbins and Coulter, 1996, Robbins et al., 1997]. Policies are created in a collaborative and iterative process, i.e. policy making is a routine collaborative task conducted in organisations in order to address recurring policy problems. The policy making process (PMPs) involves interaction amongst three broad streams of activities: problem definition, solution proposals and choice of the line of action through consensus. Policy making stakeholders must therefore participate in complex and important decision-making processes, if they are to be effective in representing organisational interests.

The PMP is a collaborative design process where attention is devoted to the structure, to the context and constraints (concerns) of the process, and to actual decisions and events that occur [Sabatier, 1999]. Our focus is to examine those concerns that have a collaborative nature such as setting of unclear and contradictory policy goals, the disagreement about the nature of the policy problem and the desired solutions, the involvement of stakeholders in the process but with different and incompatible interests and policy preferences, and usage of information from different sources and different stakeholders. To deal with these concerns i.e. to make organisational policy making better, it requires enhancing the collaborative aspects involved in the policy creation process activities. Such collaborative aspects in these process activities among others include knowledge and information exchanging between stakeholders, shared understanding of the policy problem to identify goals and desired solutions, decision-making and consensus building on policy results [Kolfschoten, 2007]. The success of the organisational PMP concerns is thus greatly determined by a well-managed process of collaborative policy making. Moreover addressing the collaborative concerns can also help organisations gain value out of their investment.

In this research, we believe that Collaboration Engineering (CE) can lead

to improved organisational policy making processes (PMPs) and the resulting policies i.e. the quality of the policies that are being decided on. To achieve this, we argue that organisational PMPs are inherently collaborative in nature, and that better support of these collaborative processes can lead to improved organisational PMPs and the resulting policies. In providing better support for the collaborative processes underlying organisational PMPs, we turn to CE. Collaboration Engineering (CE) is defined by Vreede and Briggs [2005] and Briggs et al. [2006b] as an approach to designing collaborative work practices for high-value recurring tasks, and deploying those designs for practitioners to execute for themselves without ongoing support from professional facilitators. CE is an approach to address recurring collaboration processes that can be transferred to groups that can be self-sustaining in these processes using collaboration techniques and technology [Vreede, 2004].

This research therefore offers a theoretical and practical basis to guide the improvement of organisational policy making processes and the resulting policies. In other words, the research offers a design theory to guide the design of quality collaborative organisational policy making processes and the resulting policies from these processes. First we started with an exploration of policies and policy making processes as such, leading to a basic domain model of policy making. Since we argued that CE would lead to improved organisational PMPs, we continued with examining the CE approach to see if it indeed could provide for the collaborative needs of PMPs.

Given our understanding of the CE approach, we then argued how the collaborative needs for PMPs could benefit from this approach. The collaborative needs were derived from organisational PMP collaborative concerns based on existing literature on policy making and exploratory study interviews among policy stakeholders in four organisations. The CE benefits to collaborative needs among others include: the thinkLets' built-in rules can enable group/team execution of a collaboration process by permitting representation of all participants in all collaborative activities as well as provide a group/team with explicit detail of how to conduct a collaboration process; the patterns of collaboration 'clarify', 'evaluate' and 'consensus building' offer thinkLets support that enable availability of a shared base for information and knowledge usage, as well as enable joint development, shared understanding, shared meaning and context, and consensus; and group collaboration facilitates optimal usage of available resources to enable attainment of a group goal [Briggs et al., 2003, Kolfschoten et al., 2004, Vreede and Briggs, 2005, Briggs et al., 2006b, Vreede et al., 2006, Kolfschoten and Vreede, 2007].

At the same time, however, we argued how the quality of organisational PMPs and resulting policies may in theory benefit from the CE approach. We therefore continued with the definition of quality of policies and policy

making processes. Quality of a policy is defined in our research as: policy acceptance; effectiveness; policy completeness; and shared understanding and meaning of policy elements. A quality collaborative PMP design is one that supports adequate accommodation of individual stakes to enable the acceptance and achievement of the policy goal, a design that supports the reduction in cognitive load to enable shared understanding and meaning of the policy elements to meet the policy intentions, a design that supports achieving the policy goal, and a design that supports shared resource availability for information and knowledge to permit policy aspects fulfilment. These definitions led to a refinement of the initial domain model of the organisational PMP which included this notion of quality to a collaborative organisational policy making process prescription (CPMP).

The contributions of our research are an understanding of collaborative needs for organisational PMPs, a theory on high quality policies, quality design dimensions for the CPMP process design and CPMP process design object. The CE benefits to collaborative needs can be used to address the organisational PMPs collaborative concerns by designing heuristics to aid collaboration engineers in designing processes to realise quality policies that are being decided on. The theory offers metrics that can be used by organisational stakeholders to define high quality policies from their collaborative policy meeting efforts. The quality design dimensions for the CPMP process design can be used for its designing, execution and evaluation to derive a quality collaborative policy making process. The validated CPMP process design object can be used to support improving a quality organisational collaborative policy making process and developing quality organisational policies.

The CPMP was executed in four case organisations; governmental, industrial, and university settings, respectively. The CPMP has three distinctive features; first, it moves the policy stakeholders from identifying policy goals and objectives (that address a defined policy problem) to deciding on policy solutions in terms of policy elements and their implications. Nevertheless, a policy stakeholder can also decide to start the process in the policy objectives identification phase if the policy goals are defined beforehand, or the policy elements phase if the policy goal and objectives are defined before hand. Second, all the three phases move the policy stakeholders from divergence (brainstorming) to convergence (clearly defining key policy aspects, i.e. goals, objectives, policy elements and their implications). The reason for first diverging is to first allow policy stakeholders to share all the information they wish to, but at the same time make sure that the whole group will leave the policy making meeting/workshop with a clear understanding of what they think are the key policy issues. Finally, in all the three phases, the policy

stakeholders have the possibility to not only identify key policy issues, but also prioritise them. This enables the policy stakeholders to walk away with a prioritised 'to-do' policy document. Based on the evidence from the four cases, we found out that the CPMP enables active involvement of different stakeholders and to solicit their input and to build consensus through discussions. We evaluated the quality of the CPMP and found out that it was averagely successful across all the four organisations. We found out that the quality of the CPMP process design, in terms of its effectiveness, efficiency, stakes accommodation, shared resource availability, cognitive load reduction, and applicability/reusability proved to be satisfactory. Nevertheless, though limited with levels and numbers of participants, the respective participants' feedbacks from the validation exercise in addition to our observations provide an encouraging conclusion.

# Samenvatting

Beleid is erg belangrijk voor het nemen van beslissingen in organisaties [Robbins and Coulter, 1996, Robbins et al., 1997, Ford and Spellacy, 2005, DECS, 2008]. Beleid wordt gevormd in een proces van samenwerking, waarin problemen worden gedefinieerd, oplossingen worden voorgesteld en acties worden gekozen. De betrokken belanghebbenden participeren zodoende in een complex proces. We richten ons op Policy Making Processes (PMPs). Daarbij kijken we vooral naar die aspecten die samenwerking vereisen, bijvoorbeeld het formuleren van vage en conflicterende doelen. Om dit goed te kunnen doen is het noodzakelijk dat kennis wordt uitgewisseld tussen de belanghebbenden.

Het doel is om de kwaliteit van PMPs te verbeteren met behulp van Collaboration Engineering (CE). CE is gedefinieerd door Vreede and Briggs [2005] and Briggs et al. [2006b]. Op deze manier willen we een theoretische en praktische basis maken om PMPs en het resulterende beleid te verbeteren. We zijn begonnen met het opstellen van een domein model voor PMPs. Vervolgens hebben we onderzocht of CE wel geschikt is om PMPs te ondersteunen.

Dit heeft geleid tot de voorlopige conclusie dat PMPs baat zouden kunnen hebben bij CE. We hebben daarbij gebruik gemaakt van literatuur en van exploratieve interviews met belanghebbenden in verschillende organisaties. Om CE te gebruiken moeten we zogenaamde thinkLets toepassen. Dat zijn een soort patronen voor samenwerkingsprocessen. Zo zijn er bijvoorbeeld thinkLets voor verduidelijking, evaluatie en consensus. Deze moeten zodanig worden toegepast dat een gemeenschappelijk doel bereikt kan worden [Briggs et al., 2003, Kolfschoten et al., 2004, Vreede and Briggs, 2005, Briggs et al., 2006b, Vreede et al., 2006, Kolfschoten and Vreede, 2007].

Daarnaast hebben we een model opgesteld om de kwaliteit van PMPs en van het resulterende beleid te definieren. De kwaliteit van beleid hebben we onder andere gedefinieerd in termen van acceptatie, effectiviteit, en volledigheid. Hiermee hebben we het initiele domain model verfijnd.

Dit onderzoek heeft geleid tot een beter begrip van de collectieve behoeften van PMPs'. Verder ook tot een theorie over de kwaliteit van beleid

en tot een Collaborative Policy Making Process ontwerp (CPMP). De theorie is gebaseerd op metrieken die belanghebbenden kunnen gebruiken om de kwaliteit van PMPs binnen hun domein te verbeteren.

De CPMP is uitgevoerd in de context van verschillende organisaties. Drie kermerken speelden daarbij een rol. Ten eerste moeten belanghebbenden doelen formuleren en oplossingen voorstellen. Ten tweede is er sprake van zowel divergentie (bijvoorbeeld brainstormen) als convergentie. Ten derde moeten er prioriteiten worden vastgesteld. De kwaliteit van de CPMP bleek redelijk succesvol te zijn in de verschillende organisaties. Hoewel verder onderzoek nodig is, was er in het algemeen een positieve feedback van de deelnemers.

# Curriculum Vitae

Josephine Nabukenya was born in Kampala, Uganda. In 1994 to 2001, she graduated from a Bachelor of Library and Information Science, a Post graduate diploma in Computer Science and MSc. Information Science at Makerere University. Her MSc. research study assessed the need for effective Management Information Systems (MIS) Implementation in Business Organisations in Uganda. The study attempted to establish the various obstacles that inhibited MIS implementation and strategies that could facilitate effective implementation. The study identified how best formulation and implementation of an ICT Policy could strengthen MIS usage in these organisations. Before joining Makerere University in December 2001, she worked as a Senior Information Scientist for the Resource Centre of the Uganda Ministry of Health, on a six months contract. In this period, she was responsible for mainly identifying priority areas for information collection, processing and management; assisting and advising on policy issues relating to information gathering and dissemination; and updating the Ministry website among other things. She also wrote a concept paper for the resource centre to design the Health Data Bank and an automated Library and Documentation centre; these are fully automated and in operation. From the Ministry, she joined the Institute of Computer Science and later the Faculty of Computing and Information Technology of Makerere University in the Department of Information Systems where she lectures and researches to date. In November 2004, she embarked on her doctorate studies, and during her research, she presented her work at a number of international conferences and workshops. She also reviewed for several conferences. Lastly, she has been and is still teaching both the bachelor and master courses at the faculty, as well as supervision of students' projects.

# SIKS Dissertatiereeks

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1998
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