A Theory-Driven Design Approach to Collaborative Policy Making Processes

Josephine Nabukenya
josephine@cs.ru.nl

Patrick van Bommel
p.vanbommel@cs.ru.nl

H. A. (Erik) Proper
E.Proper@cs.ru.nl

Institute for Computing and Information Sciences, Radboud University Nijmegen, The Netherlands

Abstract

In this paper, we consider improving collaborative policy making processes. We suggest Collaboration Engineering (CE) as an approach that can be useful in enhancing these processes. However, CE needs a theoretical basis to guide the design. This basis is provided by the quality dimensions and the causal theory. We therefore present a theory that provides an understanding of what makes good policies in policy making. This understanding should lead to design choices that should be taken into account to design quality collaborative policy making processes.

To determine the quality dimensions of good policies, we use field exploratory studies and literature in the policy making domain research. Furthermore, we consider cause and effect relationships for these quality dimensions to derive the theory.

1. Introduction

The complexity in organizational decision-making requires a multitude of approaches for it. Among them is the concept of policy. This concept has been defined by several researchers in different fields such as business and government. For example, in the field of business, Robbins et al., [23] defines 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, Rose [24] defines a 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 [12] 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 realize 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 behavior seems a necessary part of a policy definition. Anderson [2] 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, and it differentiates a policy from a decision, which is a "choice among competing alternatives". 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 behavior in acceptable directions [26].

Using the above policy definitions examples, we observe that most of them reflect a policy to be a purposive action and not a rule. We also observe that a course of action involves a set of actors and not one. In addition, these definitions commonly show that a policy relates to decisions and aims at realizing goals. Explicit policies are a key indicator for successful organizational decision-making. Taking into account the various perspectives of policy, and to put our research into context, 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 realizing goals* [20].

To develop and implement policies, organizational stakeholders follow a policy making process. Sabatier [25] describes the process of policy making to include the manner in which problems get conceptualized and are brought to a governing body in order to be resolved. The governing body then formulates alternatives and select policy solutions; and those solutions get implemented, evaluated, and revised. When analyzed, this definition means that policies are created in a policy making process, which involves 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. It also means 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 production of the policy. In other words their contributions should make the policy itself to achieve the policy goal. Further more, it means that the actors involved in the policy making

978-0-7695-3450-3/09 $25.00 © 2009 IEEE

process need to have information to understand the dynamics of a particular problem and develop options for action. In addition, it means that policy making is a result-focused process that requires understanding of the policy by the actors involved in order to solve the problem at hand.

Often the results from policy making are not what the different stakeholders intended. This is due to the fact that different stakeholders have multiple opinions and views, incompatible interests and diverging areas of interest [9, 25, 17, 22], yet all have to be brought together to produce an acceptable policy result. These challenges can be dealt with by enhancing the collaborative aspects involved in policy making processes in order to produce acceptable policies (good policies). Although not the focus of this research, we argue that the CE approach can be useful in providing improvement in the quality of collaboration for a recurring mission critical task in the organization [30]. CE is useful for collaborative policy making processes in such a way that it provides patterns of collaboration and thinkLets that can enable actors/stakeholders involved in a process to perform tasks collaboratively with an intention of achieving a group goal [5]. It also provides recurring collaboration processes and these can enable organizations to derive benefit from the improvement again and again once a single design of a collaborative policy making process is in place [30]. With a single design, more policy types can be developed. That is, the same design can be customized to develop different policy types. More so, more stakeholders can be trained on using this process, therefore lessening the idea of relying on external experts or facilitators in guiding to develop good policies in addition to reducing on costs of hiring them.

Even though CE can be useful for enhancing collaborative policy making processes, it however still needs a theoretical basis to guide the process design. This is because CE is a process building and not a theoretical building approach. In other words, to improve collaborative policy making, we need to understand the design choices that should be considered to design quality processes. Understanding of the design choices requires first to understand what makes a good policy. The basis of understanding what makes a good policy is provided by the quality dimensions and the causal theory.

Precisely, the research question undertaken in this paper is that of an understanding of what makes good policies in collaborative policy making. In short, our research focuses on a theory that provides an understanding of what quality dimensions should be considered to make a good policy. That is a theory that defines how stakeholders come to/realize a good policy. We tend to believe that focusing analysis on these dimensions will enable us to determine design choices to consider in designing quality collaborative policy making process(s) design. A quality process design can be used to improve quality of policy making and the resulting policies. In other words, the quality of this collaboration has a profound impact on the quality of the resulting policies and the acceptance by its stakeholders.

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. An explanation of the relationship between these quality dimensions leading to a good policy is what the theory is. This makes the nature of our theory a predictive theory type. In other words, in this theory we provide predictions and testable propositions with causal explanations [15].

The paper continues as follows: in the next section, we present the analysis of the sources of the quality dimensions. This leads us to the definitions and discussion of the quality dimensions. Third, we discuss the causal model of the theory derived from these dimensions. Finally the conclusion summarizes the contribution of this research and a discussion on further research.

2. Quality of policies in policy making

The notion of *quality* is described in various literatures and tailored to specific application fields such as Operations Management [13], Software Engineering [27], Policy Analysis studies [14], Management [1, 23], among others. This means, the concept of quality is considered in context. We are interested in providing a theory that offers an understanding of the quality dimensions that define quality policies. An approach to analyze these dimensions 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 reduced the scope of our source to literature related to managing policy networks. This scope analyzes how to manage policy and decision-making networks to arrive at acceptable policies. We therefore reviewed literature from Herik [14], Sabatier [25], Riet [22], Koppen and Klijn [17], and Buuren et al [9]. In their research, policy and decision-making networks are characterized as complex settings with multi-actor stakeholders, each 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 realize a policy goal, even when there was a high level of agreement about a desired direction. From this analysis, we observed that most researchers suggest mutual agreement and acceptance of the policy results as dimensions of a good policy. Koppen and Klijn [17] and Buuren et al., [9] argue that achieving acceptance is based on stakeholders sharing and using the relevant and right

information and knowledge to guide policy making. They suggest that when there is availability and collective usage of information, 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 [17]. Herik [14], Sabatier [25], and Riet [22] suggest 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, involvement of stakeholders in policy making can enable their stakes to be taken into account. The researchers argue that if such aspects are considered in policy making, this can reduce on disagreement on the policy goal and conflicts among actors [25, 14, 22], thus enabling mutual agreement and acceptance of policy results. Another dimension commonly suggested is on achieving consensus. Herik [14], Sabatier [25], Koppen and Klijn [17], and Buuren et al [9] suggest shared understanding and meanings of policy aspects to enable decision-making and consensus. Sabatier [25], Koppen and Klijn [17] argue 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 researches 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. In the second analysis we performed field explorative studies on policy making environments. We visited 3 case organizations that have policy making functions. To perform these studies, we used face-face interviews with qualitative questions. As part of the interviews, we asked stakeholders what they considered as key qualities of policies and qualities of policy making processes. The perspectives (answers) were analyzed to derive quality dimensions of 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 the condensed 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
- 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
- Feasible

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 as a result.

2.1. Quality dimensions for good 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 analyze this understanding to derive a theory on what makes good policies. That is a theory that defines how stakeholders come to a good policy. To visualize 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.

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 policy making process. Based on the analysis above, we argue that acceptance of

a policy result can 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 [14, 25, 22, 8]. 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 organizational interests in policy making can be more sufficient in achieving a good policy. When stakes are accommodated, the involved stakeholders can 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 can enable acceptance of the policy result by the stakeholders. This is in line with what Venkatesh et al., [29] and Davis et al, [11] 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 overall policy goal and objectives. In Figure 1, we use the box-arrow-oval model to illustrate the conditions to acceptance quality dimensions.

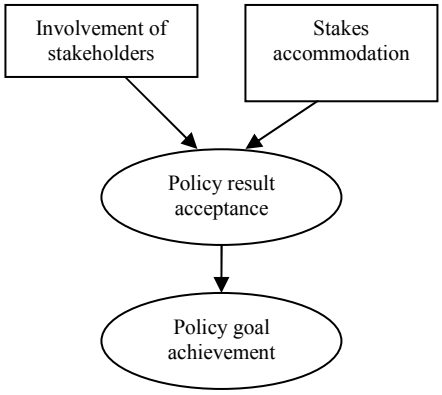

Fig.1. Acceptance quality dimension

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 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 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 organizational interests [8, 25, 19]. The involvement of the right and relevant stakeholders in the process can help to stimulate more and specific resources such as knowledge and expertise [17] needed to achieve the policy goal. Also involvement of stakeholders can lead to support for and acceptance [29, 11, 6] of the policy outcomes and decisions taken. Support for and acceptance of policy results can build stakeholder interdependency [19, 8].

Completeness of policy

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 [7]. Completing the policy can lead to achievement of the policy goal. Briggs [7] argues that resources should be interactively used and focused towards achieving a goal. We therefore define completeness of policy dimension as *the fulfillment 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 2.

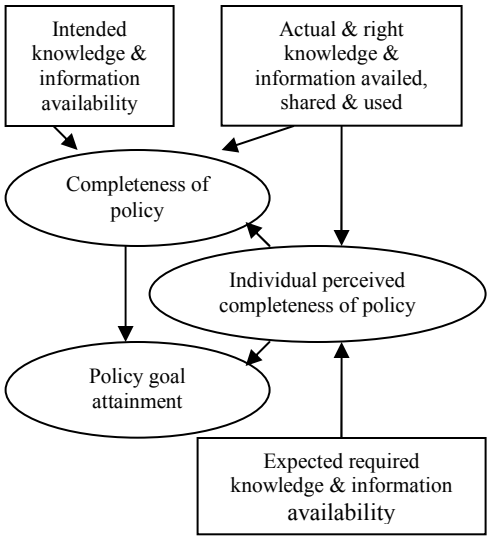

Fig.2. Completeness quality dimension

To take care of completeness of the policy, availability of knowledge and information resources should be considered [7]. 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 2. We use Nunamaker et al., [21] intellectual bandwidth model to explain the availability of knowledge and information. Availability of information means that policy stakeholders have an understanding of issues involved in or related with the policy to be developed, and its context. Availability of knowledge means that 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 [21]. However, stakeholders with more information will 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 [3]. If policy stakeholders involved in the process do not understand or have the required knowledge and relevant information resources [7] on the policy domain in question; they will definitely not be able to fill its policy aspects, and thus not attain the policy goal. More so, if stakeholders choose not to avail and share their information and knowledge resources, then they still can not complete the policy; thus will not achieve the policy goal [7]. Dealing with this shortcoming would require the willingness from stakeholders to avail, share and use their resources. To manipulate this willingness, we adopt the instrumentality theory of Briggs et al., [3, 4]. 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 [3, 4]. This means that the policy goal should provide the stakeholders some individual utility [3]. When stakeholders are willing to avail, share and use their resources towards achieving their goal, it can enable fulfillment of the policy aspects (completeness of the policy), thus 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 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 [7] in the process design as seen in the lower box of figure 2.

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 [18]. Based on this understanding and to have a more general definition, we borrow the definition of In't Veld [28] 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).

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 [7].

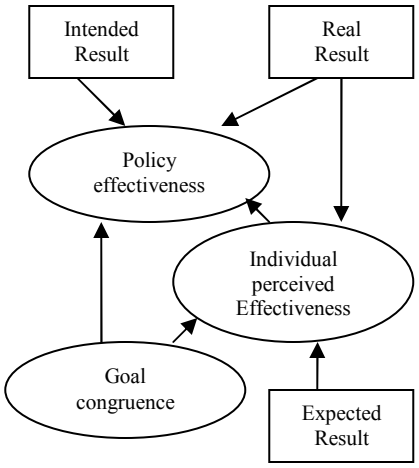

Fig.3. Effectiveness quality dimension

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 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 [18]. Locke & Latham [18] argue that the more specific the shared requirements to the results, the more focused and specific the group effort.

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 behavior 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 involved stakeholders is necessary. When stakeholders have mutual meanings and understandings of the policy elements, it can lead to their conformity to and understanding of the policy as depicted in figure 4. Conformity to and understanding of the policy can enable stakeholders easily use the policy [11]. 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 communication [10]. Using these perspectives, we will describe clarity and understanding of policy elements to mean stakeholders' ability to communicate the intended behavior as intended in the policy goal. Considering clarity and understanding of policy elements to mean communicating intended behavior, 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 [10]. Craig argues that the transmission model is a useful model to scrutinize communication as an intentional act carried out in order to achieve some anticipated outcome [10].

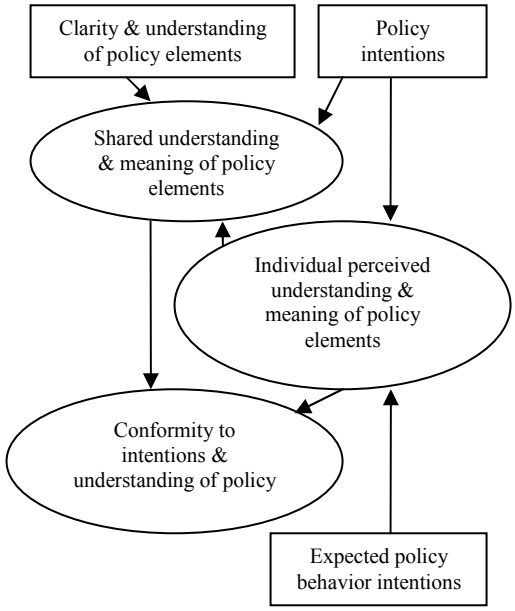

Fig.4. Shared understanding quality dimension

At the same time, individual stakeholders also have their own perceived understanding and meaning of policy elements. This will influence their ability to mutually understand the policy elements and thus affect the conformity levels of the policy intentions as seen in figure 4. A degree of disparity and divergence in the clarity and understanding of policy elements will cause disagreement [4]. This can reduce the level of shared understanding and meaning. Like wise, a low level of shared understanding and meaning of policy elements lessens conformity to policy intentions and understanding of the policy. To decrease these variations, we would need to increase the level of details of the policy intentions (intended policy goal) [18] to enable reflection of what should entail policy elements.

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

3. Theory on good policy

Given the above models (figures 1 – 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. The model is visualized by 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.

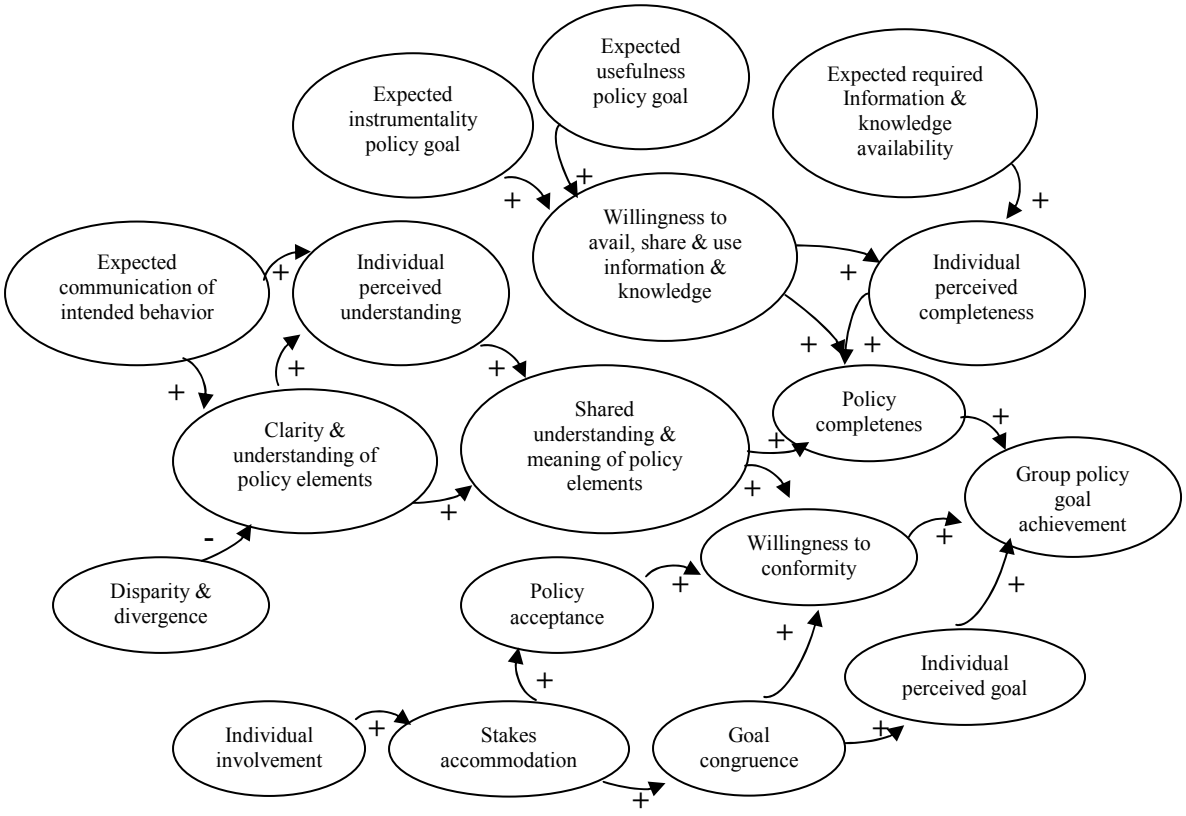

Fig.5. Theory on good policy

In this model, the final result is 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, conformity to intentions of the policy can cause achievement of the policy goal. But again, this relation is not obvious. If stakeholders are not willing to conform to policy intentions, this will lead to ineffectiveness and thus a lower degree of policy goal achievement. One of the conditions to the relation between conformity and 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 [7]. To make and get better this condition, we need to make sure that 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 can enable conformity to policy intentions. When the accommodated stakes and individual goals are compatible with the group goal, it can cause policy goal achievement.

Another condition to the relation between conformity and achievement of the policy goal is acceptance of the policy by the stakeholders. Acceptance has been described in various theories on technology acceptance. Using perspectives from Venkatesh et al., [29], Davis et al., [11] and Briggs et al., [6] 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, [11] suggest that the aspects should be useful and easy to use, Briggs et al., [6] 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 will cause acceptance of the policy and thus enabling achievement of the policy goal.

Shared understanding of policy elements is another condition to the relation between conformity of policy intentions and policy goal achievement. Shared understanding of policy elements depends on clarity and understanding of the policy elements. In the previous section we explained what clarity and understanding of policy elements means. We based our argument on the communication theory in [10]. When 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 availability, sharing and usage of right and relevant information and knowledge by 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 [7]. This willingness can be manipulated by adopting the instrumentality theory of Briggs et al., [3, 4] as explained in the completeness quality dimension in the preceding section. Availing, sharing and using the right and relevant information and knowledge can enable fulfillment of policy aspects. These policy aspects should address the policy goal leading to policy completeness and thus causing goal achievement.

The second condition to completeness of a policy is shared understanding and meaning of the policy elements. In 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 [10]. When the policy elements communicate the intended behavior as what the stakeholders intended, then the elements will be clear to the stakeholders. The stakeholders will then understand what the policy elements mean. This can cause completeness of the policy and thus achievement of the policy goal. However, any degree of divergence and disparity in the meaning and understanding of the policy elements will impact on the completeness of the policy, and thus impact on the policy goal achievement.

The causal model in figure 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 realized 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 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 fulfillment 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 fulfill all the policy aspects to produce the real 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.

Based on the abovementioned quality dimensions, this theory gives a first understanding of what makes a good policy. That is, it defines the dimensions that should be considered to realize a good policy from a collaborative policy making effort. These dimensions should enable us to understand what design decisions to consider for designing quality collaborative policy making processes design. The quality process design should improve policy making and thus the resulting policies.

4. Conclusions

In this paper, we have discussed how to realize good policies from collaborative policy making effort. We have identified several quality dimensions for a quality policy and derived a theory from these dimensions. We can use this theory to derive the design choices we can consider for designing a quality process design to improve collaborative policy making and the resulting policies: design that supports adequate accommodation of individual stakes to enable acceptance and achievement of the policy goal; design that supports joint development, shared understanding, meaning and context of policy elements to meet policy intentions; design that supports achieving the policy goal; design that supports a shared base for information and knowledge usage to permit policy aspects fulfillment; design that supports interactive and optimal resources usage to attain the policy goal.

Based on the quality dimensions and the causal relationships, we can conclude that our theory gives a first understanding of policy making application domain-specific quality dimensions that can be considered to realize quality policies. We also conclude that these domain-specific quality dimensions can be used to determine design choices for designing quality collaborative policy making process(s) design. The quality collaborative policy making process design can be used to improve the quality of policy making and the resulting policies.

Since the focus of this paper was more on the theory that can be used to realize good policies, we however did not yet test it. As a next step therefore, we aim to test the theory. We will do this first by further understanding how we can use this theory to determine the actual design choices to design quality collaborative policy making processes. Then the designed quality collaborative policy making process design will be validated and assessed to

enable improving collaborative policy making and the resulting policies (theory).

References

[1] Alter, S., (1996): Information Systems: A Management Perspective. The Benjamin/Cummings Publishing Company Inc., Menlo Park, California, USA.

[2] Anderson, J. E., (2003): Public Policy-making: An Introduction, Houghton Mifflin, Boston, USA, 5th Ed.

[3] Briggs, R.O., Kolfschoten, G.L., and Vreede, G.J. de (2006): Instrumentality Theory of Consensus, In First HICSS Symposium on Case and Field Studies of Collaboration, Kauai.

[4] Briggs, R.O., Kolfschoten, G.L., and Vreede, G.J. de (2005): Toward a Theoretical Model of Consensus Building, In Americas Conference on Information Systems, Acapulco, Mexico, AIS

[5] Briggs, R.O., Vreede, G.J. de and Nunamaker, J. F., Jr., (2003): Collaboration Engineering with Thinklets to Pursue Sustained Success with Group Support Systems. Journal of MIS 19, 31–63.

[6] Briggs, R.O., Adkins, M., Mittleman, D.D., Kruse, J., Miller, S., and Nunamaker, Jr. J.F., (1998-1999): "A technology transition model derived from qualitative field investigation of GSS use aboard the U.S.S., CORONADO", Journal of Management Information Systems, 15(3), 151-195.

[7] Briggs, R.O., (1994): The Focus Theory of Group Productivity and its Application to the Design, Development, and Testing of Electronic Group Support Technology, PhD Thesis, University of Arizona.

[8] Bruijn H., de, and Heuvelhof, E., ten, (2008): Management in Networks: On multi-actor decision making, Routledge, New York, USA

[9] Buuren, M. W. van, Edelenbos, J., and Klijn, E. H (2004): Managing knowledge in policy networks: Organizing joint fact-finding in the Scheldt Estuary. In Proceedings of the International Conference on Democratic Network and Governance, Copenhagen, Denmark.

[10] Craig, R.T., (1999): Communication Theory as a Field, Communication Theory, 9, 119-161

[11] Davis, F. D., Bagozzi, R.P. and Warshaw, P.R., (1989): User Acceptance of Computer Technology: A Comparison of Two Theoretical Models, Management Science, 35(6), 689-703

[12] Friedrich, C., (1963): Man and His Government, Wiley, New York.

[13] Harrison. M., (1996): Principles of Operations Management, Pitman Publishing, 128 Long Acre, London, Great Britain.

[14] Herik, C.v.d., (1998): Group Support for Policy Making. PhD thesis, Delft University of Technology, Delft, the Netherlands.

[15] Gregor, S., (2006): The Nature of Theory in Information Systems, MIS Quarterly, 30(3), 611-642

[16] Kolfschoten, G.L., (2007): Theoretical Foundations for Collaboration Engineering, PhD thesis, Delft University of Technology, Delft, Netherlands.

[17] Koppenjan, J.F.M., and Klijn, E.H., (2004): Managing uncertainties in Networks. A Network Approach to Problem Solving and Decision Making. London: Routledge.

[18] Locke, E.A. and Latham, G.P., (1990): A Theory of Goal Setting and Task Performance, Englewood Cliffs, Prentice Hall.

[19] Marleen, K., van de, (2006): Making a difference: On the constraints of consensus building and the relevance of deliberation in stakeholder dialogues, Journal of Policy Science, 39, 279–299

[20] Nabukenya, J., (2005): Collaboration Engineering for Policy Making: A Theory of Good Policy in a Collaborative Action, eds., H. Bounif, Proceedings of the 12th Doctoral Consortium, held in conjunction with the 17th Conference on Advanced Information Systems Engineering (CAiSE'05), Portal, Portugal.

[21] Nunamaker, J.F. Jr., Briggs, R.O., Vreede, G.J.de., Sprague, R. (2001): Enhancing Organizations' Intellectual Bandwidth: The Quest for Fast and Effective Value Creation. Journal of Management Information Systems, 17(3), 3-8.

[22] Riet, O.v.d., (2003): Policy Analysis in Multi-Actor Policy Settings: Navigating between negotiated non-sense and superflous knowledge, PhD thesis, Delft University of Technology, Delft, Netherlands.

[23] Robbins, S., Bergman, R., and Stagg, I., (1997): Management. Prentice Hall Australia Pty Ltd., Prentice–Hall, Sydney, USA.

[24] Rose, R.e. (1969): Policy Making in Great Britain, Macmillan, London, UK.

[25] Sabatier, e. (1999): Theories of the Policy Process. West view Press, Boulder, Co.

[26] Schneider, A., and Ingram, H., (1997): Policy Design for Democracy, University Press of Kansas, Lawrence, Kansas, USA

[27] Sommerville. I., (1989): Software Engineering, Addison–Wesley, Reading, Massachusetts, USA.

[28] Veld, J. In't (1987) Analyse van Organisatie Problemen, Stenfert Kroese, Leiden.

[29] Venkatesh,V.,Morris, M. G., Davis, G. B., Davis, F. D., (2003): User acceptance of information technology: Toward a unified view, MIS Quarterly, 2003, 27, 3, 425-478.

[30] Vreede, G.J.de., and Briggs, R.O., (2005): Collaboration Engineering: Designing Repeatable Processes for High-Value Collaborative Tasks. In Dickson, G., DeSanctis, G., eds.: Proceedings of the 38th Hawaiian International Conference on System Sciences, Los Alamitos, Hawaii, USA, IEEE Computer Society Press.