STAKEHOLDER DYNAMICS

IN THE DUTCH ENERGY TRANSITION

TOWARDS A SHARED FRAME OF REFERENCE

V. de Gooyert

Stakeholder dynamics in the Dutch energy transition

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Contents

Chapter 1

Introduction

1.1 Research objective

The successfulness of an organization depends on its capacity to simultaneously satisfy the needs of its customers, suppliers, employees, communities, and financiers (Freeman, 1984; Parmar et al., 2010). Overlooking the interests of one or more of these stakeholders when making strategic decisions may result in conflicts that typically attract negative media attention. These conflicts can inflict huge costs on organizations, both financially because of the costs involved with turning back decisions after they have been implemented and in terms of the reputational damage caused by negative publicity that comes with a high profile stakeholder conflict (Bosse et al., 2009; Choi and Wang, 2009; Hillman and Keim, 2001).

An example of such a conflict is the smart meter rollout in The Netherlands. The smart meter is considered to be an important enabler of the transition towards a more sustainable energy system and over the last decade the Dutch energy industry has been working towards introducing this digital version of the meter that measures a household's energy consumption. The organizations responsible for the rollout clearly failed to take the interests of one of their stakeholders into account: fed by concerns about privacy and safety, consumers resisted the implementation of smart meters in their home and this finally led to a delay of eight years (Hoenkamp et al., 2011).

The objective of this research is to put organizations in a better position to avoid the unanticipated resistance from stakeholders that strategic decisions sometimes meet. Therefore, the overarching question of this thesis is: what does it take for an organization to simultaneously serve the interests of multiple stakeholders? An improved understanding in this respect helps to avoid turning back strategic decisions after they have been made, preventing the associated costs.

1.2 Research background

Simultaneously satisfying the needs of multiple stakeholders in strategic decision making is a complex challenge and research on this matter has been scattered across disciplines (Parmar et al., 2010). To address this complexity, this dissertation is multidisciplinary in the sense that it builds on three very different literatures: stakeholder theory, managerial and organizational cognition, and operational research. There are a number of tensions between the views presented in these different literatures. The largest contrast exists between stakeholder theory and managerial and organizational cognition on the one hand and operational research on the other, since the former originate in the social sciences, while the latter originates in the

formal sciences. Stakeholders have always played an important role in all three literatures but in general, stakeholder theory and managerial and organizational cognition have primarily been focused on describing and understanding the process of simultaneously taking multiple stakeholders into account in strategic decision making, while operational research has primarily focused on improving this process and developing the tools that support it. Although stakeholder theory and operational research were closely linked when stakeholder theory originated (Freeman, 1984), the gap between these literatures is currently considerable and constituted the motivation for this research. Below follows a short description of the three literatures as well as their relevance to this dissertation.

1.2.1 Stakeholder theory

Stakeholder theory is a large body of knowledge that focuses on simultaneously taking the interests of multiple stakeholders into account (Donaldson and Preston, 1995; Freeman, 1984; Jones, 1995; Laplume et al., 2008; Parmar et al., 2010). In this literature, stakeholders have been defined as 'any group or individual who can affect or is affected by the achievement of an organization's purpose' (Freeman, 1984, p. 53). Stakeholder theory, rather than being a single theory, is a rich "research tradition" with both conceptual and empirical studies emphasizing stakeholders (Trevino and Weaver, 1999, p. 222). In other words, "there is no stakeholder theory": stakeholder theory does not refer to a single hypothesis or a narrowly defined set of hypotheses, rather it refers to "a genre that is quite rich" (Freeman, 1994, p. 409). Stakeholder theory originally focused on managerial aspects (Donaldson and Preston, 1995; Freeman, 1984), recommending "the attitudes, structures, and practices that, taken together, constitute a stakeholder management philosophy" (Donaldson and Preston, 1995, p. 87). However, soon after its inception the genre branched out in different directions, including business ethics, strategic management, finance, accounting, marketing, and management (Parmar et al., 2010).

In stakeholder theory, studies have successfully showed that paying more attention to stakeholders improves an organization's performance (Berman et al., 1999; Choi and Wang, 2009; Clarkson, 1995; Hillman and Keim, 2001; Preston and Sapienza, 1990). An important gap in stakeholder theory is that up to now no distinction has been made between the desire of organizations to simultaneously take multiple stakeholders into account, or stakeholder orientation, and the extent to which organizations succeed in actually putting this desire into practice (Adams et al., 2011; Crilly, 2011; Crilly and Sloan, 2012; Crilly et al., 2012; De Luque et al., 2008; Kacperczyk, 2009; Shropshire and Hillman, 2007). Organizations are expected to

have a consistent stakeholder culture, with values, beliefs, and practices well aligned (Jones et al., 2007). The smart meter controversy however shows that organizations do not necessarily have a consistent stakeholder culture, with a gap between values and beliefs on the one hand and practices on the other. This dissertation focuses on the question why it is so hard to translate the ambition to simultaneously take multiple stakeholders into account into actually doing so. As such, this dissertation contributes to knowledge on the conditions under which stakeholder management proves to be instrumental.

1.2.2 Managerial and organizational cognition

When making decisions, strategists rely on their interpretation of their organization's environment (Narayanan et al., 2011; Walsh, 1995). Their deeply held beliefs about the nature of reality, also referred to as mental models, or frames, influence which cues from the environment decision makers notice as well as which meaning that they ascribe to these cues (Daft and Weick, 1984; Weick, 1995). From the managerial and organizational literature it is known that frames of decision makers within a single organization tend to converge over time, leading to a gap between the frames inside and outside of the organization (Grant, 2003; Hodgkinson and Sparrow, 2002; Prahalad, 2004). As such, managerial and organizational cognition literature helps explain why organizations may overlook the interests of stakeholders despite their ambition to create stakeholder value, as was seen in the case of the Dutch smart meter controversy (Hoenkamp et al., 2011).

Recently, scholars have shown an increasing interest in studying what strategists do when coming to a decision (Jarzabkowski, 2005; Jarzabkowski and Spee, 2009; Whittington, 1996). It is known that strategy workshops are a popular practice (Bowman, 1995; Hodgkinson et al., 2006; Jarzabkowski and Seidl, 2008). While the literature acknowledges the role that strategy workshops may play in aligning mental models (Healy et al., 2013), studies have yet to link what strategists do in workshops to the workshops' outcomes (Jarzabkowski and Kaplan, 2015). This dissertation helps to fill this gap by analyzing in detail what participants do in strategy workshops and the associated cognitive outcomes.

1.2.3 Operational research

Operational research is aimed at developing analytical methods to aid problem solving or decision-making (Churchman et al., 1957). These analytical methods more often than not explicitly deal with the fact that problem solving or decision-making

takes place in a social context in which different stakeholders hold different perspectives, considerations, and values (Liebl, 2002). Despite the acknowledged importance of stakeholders in operational research, and despite the close link between the two fields when stakeholder theory originated (Freeman, 1984), there is currently a large gap between stakeholder theory and operational research and this gap has implications for both fields. On the one hand, it is stated in stakeholder theory that the tools to simultaneously satisfy the interests of multiple stakeholders research are lacking, while operational research has been developing these exact tools for decades (Laplume et al., 2008; Parmar et al., 2010). On the other hand, while the importance of stakeholders is generally acknowledged in operational research studies, it often remains implicit what this importance exactly is.

This dissertation aims to link stakeholder theory insights to operational research tools by providing a systematic review of the various roles that stakeholders play in operational research and linking these to stakeholder theory. As such, this dissertation provides a step in bridging these fields. In addition, one operational research tool is chosen and applied in order to allow a detailed investigation of the effects the application of such a tool may have in terms of it cognitive outcomes. Because of its specific potential in this respect, group model building (Andersen and Richardson, 1997; Rouwette et al., 2011; Vennix, 1996, 1999) is chosen as a tool to facilitate creating a shared frame of reference between internal and external stakeholders, as such helping organizations to prevent overlooking the interests of their stakeholders.

1.3 Research setting

This research is conducted at an organization that aims to improve its capacity to simultaneously satisfy the needs of its stakeholders: Alliander N.V., the holding organization of Liander N.V. which is one of three large Dutch distribution system operators (DSO). DSOs in the Netherlands are responsible for distributing gas and electricity to households and industrial consumers. Since we all rely so strongly on gas and electricity the stakes in this case are very high indeed. The gas and electricity grid in the Netherlands is coarsely divided in such a way that three DSOs each own about 30% of the infrastructure, and the remaining 10% is owned by several smaller DSOs. DSOs are responsible for distribution by medium- and low-voltage electricity infrastructure and medium-pressure gas infrastructure. High voltage electricity distribution and high pressure gas distribution is taken care of by different, national, organizations.

Starting in the early 1990s, driven by liberalization and Europeanization, the Dutch energy sector has been in a transition towards privatization and vertical

disintegration (Verbong and Geels, 2007). The most recent change in this transition is the 2006 law 'independent netmanagement', forbidding energy producers and energy distributors to be part of the same holding. Moreover, only governmental organizations may hold the shares of these separated DSOs. In 2009, the separation of Alliander was effectuated when it sold its energy-producing counterparts to multinational energy producers. Since then, Alliander Holding N.V. only has activities that are directly or indirectly related to distributing electricity and gas. To get a sense of the size of Alliander: it is the largest Dutch grid owner in terms of its workforce with 5,866 full-time employees at the end of 2014. It transported 29,936 gigawatt-hours of electricity and 6,115 million cubic meters of natural gas in 2014, had a revenue of 1,696 million euros, and profits reaching 323 million euros.

The attention to its stakeholders has played a prominent role in Alliander's strategy ever since it became clear that it was to become an independent organization in 2007. However, this ambition did not prevent Alliander from overlooking the interests of their stakeholders: Alliander was involved in the controversial smart meter rollout that developed into a good example of a high profile stakeholder conflict (Hoenkamp et al., 2011).

1.4 Research questions and thesis outline

Simultaneously taking multiple stakeholders into account in strategic decision making is a considerable challenge and the smart meter controversy shows that organizations may overlook the interests of stakeholders even despite their ambition not to do so. Chapter two uses interviews with Alliander employees and it stakeholders to investigate what makes this challenge so difficult to overcome. The research question is:

What capabilities does a firm need to develop in order to successfully translate a broad stakeholder orientation into firm performance?

While chapter two provides more insight on the challenge of simultaneously satisfying the needs of multiple stakeholders, chapter three focuses on potential tools that aid in addressing this challenge. Operational research has traditionally been employed with developing tools that support stakeholder management. To identify which tool could be the most suitable for overcoming the specific barriers that organizations encounter when trying to create stakeholder value, chapter three provides a systematic review of operational research studies that have been concerned with stakeholders. As such, the chapter answers the following question:

Which tools does operational research provide that allow organizations to improve their capacity to simultaneously satisfy the needs of multiple stakeholders?

From chapter two it appears that an important barrier to stakeholder management is the tendency of decision makers inside an organization to hold a biased perception of their organization's environment. Chapter three shows that the operational research tradition of *understanding the problem* has the potential to help organizations to decrease such a bias, by including external stakeholders in a systematic structuring of specific problems that an organization and its stakeholders face. To explore the potential of such an approach, eight group model building workshops with external stakeholders that Alliander organized were video recorded and analyzed. Chapter four describes the results of this analysis and as such provides answers to the questions:

To what extent do strategy workshops with external stakeholders achieve their purpose of building a shared frame of reference, and how does this forming of a shared frame of reference come about?

In the eight group model building workshops, stakeholders built a model of the Dutch energy transition. While chapter four focuses on the process of constructing a shared frame of reference, chapter five dives into the content of the workshops by showing what the resulting shared interpretation of the Dutch energy transition looks like. What is particularly problematic in the Dutch energy transition is the tendency of decisions to have little impact on the system as a whole, a phenomenon that has been called *policy resistance.* The workshops can be seen as a coordinated effort to overcome policy resistance in the Dutch energy transition. The resulting model has implications both for Alliander and its external stakeholders which are discussed in chapter five in addition to the added value that the group model building workshops had in comparison to other dominant approaches that have been used to analyze transitions. As such, chapter five answers the question:

Why is policy resistance in the context of sustainability transitions such persistent, and which types of policies may be identified that help overcome policy resistance?

Chapter six finally concludes the thesis and discusses the main findings and their implications.

Chapter 2

The challenge: barriers to simultaneously satisfying the interests of multiple stakeholders*

Simultaneously taking multiple stakeholders into account in strategic decision making is a considerable challenge. This chapter contrasts the results of a case study with existing theories on managing for stakeholders to identify barriers that impede simultaneously taking multiple stakeholders into account, resulting in the proposition of three stakeholder-oriented capabilities that an organization requires in order to simultaneously satisfy the interests of multiple stakeholders: entrepreneurial capabilities, coordination capabilities, and legitimacy capabilities. By theorizing what it means to be successful in creating stakeholder value, this chapter contributes to knowledge on the conditions under which stakeholder theory proves to be instrumental.

* Earlier versions of this chapter were presented as De Gooyert, Rouwette, Van Kranenburg, and Van Breen, *Exploring multiple levels of barriers to becoming a stakeholder firm, the case of a Dutch distribution system operator* at the 29th Colloquium of the European Group for Organizational Studies, Montreal, Canada, 2013, and the Institute for Management Research PhD Research Day, Nijmegen, 2013 where it was awarded with the Best Paper award.

2.1 Introduction

Successful stakeholder management can be understood as simultaneously satisfying the needs of as many stakeholders as possible, including employees, customers, suppliers, and the community as a whole (Donaldson and Preston, 1995; Freeman, 1984; Jones, 1995; Laplume et al., 2008; Parmar et al., 2010). In this view, opportunities for value creation consist of avoiding having to make tradeoffs between the interests of stakeholders by identifying occasions where the interests of stakeholders are aligned (Garcia-Castro and Aguilera, 2015; Parmar et al., 2010; Tantalo and Priem, 2014). Instrumental stakeholder theory has shown that adopting such a broad orientation towards stakeholders is associated with higher firm performance (Berman et al., 1999; Choi and Wang, 2009; Clarkson, 1995; Hillman and Keim, 2001; Preston and Sapienza, 1990), although this link is contested by some (Friedman, 1970; Jensen, 2002; Sundaram and Inkpen, 2004). Despite the promise of increased results associated with a broad stakeholder orientation, the orientation of firms toward stakeholders varies considerably, ranging from very narrow, fully focused on self-interest, to very broad, fully other-regarding (Brickson, 2005, 2007; Jones et al., 2007). This observation has spurred recent interest in antecedents of stakeholder orientation (Adams et al., 2011; Crilly, 2011; Crilly and Sloan, 2012; Crilly et al., 2012; De Luque et al., 2008; Kacperczyk, 2009; Shropshire and Hillman, 2007), while the nature of the relation between stakeholder orientation and firm performance itself has remained understudied.

With the relevance of stakeholder orientation firmly established, and the positive link between a broad stakeholder orientation and firm performance still contested by some, a move forward is needed by identifying those conditions under which a broad stakeholder orientation leads to higher firm performance. Surprisingly, little is known about such conditions. Hitt et al. (2007) and Bechky (2011) point out that we can attribute the inconsistency of performance effects in the strategy literature to a lack of knowledge about how strategy is actually implemented. Recently, studies showed a renewed interest in the question how firms may simultaneously create value for multiple stakeholders (Garcia-Castro and Aguilera, 2015; Tantalo and Priem, 2014), suggesting that the competence of a firm to implement a broad stakeholder orientation is one of the directions where such conditions may be found. Although the founding work of stakeholder theory was primarily managerial (Freeman, 1984), the *how* question has played a peripheral role in the decades afterwards. This is reflected in recent reviews of stakeholder theory identifying this as one of the most important areas for future studies, putting forward questions such as "how do firms create […] "value" for stakeholders?" (Parmar et al., 2010, p. 432) and statements as "more

attention should […] be given to the development of stakeholder management as a *capability* that produces performance, legitimacy, and a good reputation" (italics added, Laplume et al., 2008, p. 1179). Only more recently, by studying *how* firms can increase the extent to which they simultaneously create value for multiple stakeholders, this knowledge gap is being addressed (Garcia-Castro and Aguilera, 2015; Tantalo and Priem, 2014), and it is here that we intend to make a contribution.

A promising path seems to be to look inside the firm, to identify specific "strategies employed for addressing a broad range of stakeholder interests" (Parmar et al., 2010, p. 417). The capability perspective is expected to be especially helpful in this regard, since it primarily focuses on explaining differential performance by looking at how firms create value (Parmigiani and Howard-Grenville, 2011, p. 418). Applying a capability perspective therefore will help answering the question what the attributes are of firms that succeed in translating broad stakeholder orientation into firm performance (Barney, 1991). Accordingly, our research question is: *what capabilities does a firm need to develop in order to successfully translate a broad stakeholder orientation into firm performance?* Because these capabilities are specific for the link between stakeholder orientation and firm performance, rather than more general capabilities, we call them *stakeholder-oriented* capabilities. While the capability perspective has been applied in adjacent fields like environmental strategies (Sharma and Vredenburg, 1998) and stakeholder marketing (Hillebrand et al., 2015), this is to the best of our knowledge the first application of this perspective to the question how firms with a broad stakeholder orientation simultaneously create value for multiple stakeholders.

Our work is original as it looks at the tensions that play out inside the firm. We argue that the strategic decision to adopt a broad stakeholder orientation is not sufficient for achieving better firm performance, but has to be accompanied by specific organizational capabilities oriented towards the creation of value for multiple stakeholders. Earlier studies looking at stakeholder orientation conceptualized organizations as static, internally consistent entities (Adams et al., 2011; Crilly and Sloan, 2012; De Luque et al., 2008; Jones et al., 2007) and we relax this assumption by looking at inconsistencies between a firm's values and beliefs on the one hand, and its practices on the other.

The current chapter presents a single case study of a firm that recently made the strategic decision to broaden its stakeholder orientation, but reports difficulties in translating this orientation into creating stakeholder value. The case study approach allows us to explore this relatively new territory with the detail and nuance that comes with qualitative research (Bettis et al., 2015). The study consists of 23 backward-looking interviews with the firm's managers and directors and 3 with its stakeholders,

triangulated with documents and participant observations. Although access to this type of respondents is generally regarded as difficult (Adams et al., 2011), 12 out of 27 executive directors of our focal firm agreed to be interviewed, providing a unique data set. By performing such a case study we address the call of different stakeholder theorists for more fine-grained empirical results generally (Laplume et al., 2008; Parmar et al., 2010), and longitudinal studies specifically (Shropshire and Hillman, 2007).

We find that contrary to earlier conceptions, a firm may well be internally inconsistent, having its routines not aligned with its values and beliefs (Jones et al., 2007), or its routines not aligned with its identity (Brickson, 2005, 2007). We find three types of capabilities that seem to be of specific importance for the successful translation of a broad stakeholder orientation into firm performance. *Entrepreneurial* capabilities stress the routines that are necessary to create value by avoiding tradeoffs between the interests of stakeholders. This finding is especially surprising since earlier studies showed a correlation between entrepreneurial values and a narrow stakeholder orientation on shareholders (Adams et al., 2011; Agle et al., 1999). *Coordination* capabilities acknowledge that these entrepreneurial efforts take place in the context of different (groups of) individuals, which are at the same time trying to pursue other strategic priorities. *Legitimacy* capabilities finally, concern the competence of a firm to motivate its strategy to adopt a broad stakeholder orientation, including convincing skeptics of the merits of such a strategy. This finding is surprising since legitimacy is traditionally seen as one of the main reasons for adopting a broad stakeholder approach (Laplume et al., 2008), where our findings show that a broad stakeholder orientation may also jeopardize a firm's legitimacy. Taken together, these findings stress the importance of looking at the conditions that are necessary for the primary axiom of instrumental stakeholder theory to hold: that a broad stakeholder orientation results in higher firm performance.

The remainder of this chapter is organized as follows. First, we review studies on the link between stakeholder orientation and firm performance, as well as studies reporting antecedents of stakeholder orientation. Then, we describe how applying a capability perspective may elucidate conditions that need to be present for the stakeholder orientation - firm performance link to hold. After that, we present the methods of our case study, followed by its results in the form of a list of barriers that have shown to impede creating stakeholder value in our case. In the discussion, we combine these findings with the current literature to identify stakeholder-oriented capabilities, and discuss their implications.

2.2 Background

2.2.1 Instrumental stakeholder theory

Stakeholder theory has been introduced in chapter 1 (see pages 11-12 of this dissertation). During the last decades, stakeholder theory branched out in different directions (Parmar et al., 2010) and *instrumental* stakeholder theory is the branch that revolves around the positive effect that managing for stakeholders has on firm performance. Various studies in instrumental stakeholder theory have shown that focusing on stakeholders can indeed increase a firm's performance (Berman et al., 1999; Choi and Wang, 2009; Clarkson, 1995; Hillman and Keim, 2001; Jones, 1995; Preston and Sapienza, 1990). There are several mechanisms responsible for the positive relation between stakeholder orientation and firm performance. Firms that focus on creating value for their stakeholders in general gain legitimacy. Their reputation improves and the trust stakeholders have in the firm increases. This results in lower costs because conflicts with stakeholders can be avoided, and increased gains. When stakeholders act reciprocally, satisfying the needs of stakeholders will result in employees working harder, customer demand rising, improved cooperation with suppliers, and a more favorable attitude in communities (Bosse et al., 2009; Choi and Wang, 2009). Besides, a good relationship with stakeholders may prevent negative pressure from stakeholders, where otherwise costly conflicts could arise (Hillman and Keim, 2001). Increased trust in such relationships reduces agency costs, monitoring costs, and transaction costs (Jones, 1995).

While in general instrumental stakeholder theory has shown the merits of focusing on simultaneously creating value for multiple stakeholders, not all firms that adopt a broad stakeholder orientation see their performance improving. Therefore, we expect the existence of specific organizational capabilities that determine whether firms benefit from their investments in their stakeholders. But before we turn to these capabilities, we first provide more background on the recent literature on stakeholder orientation.

2.2.2 Stakeholder orientation

Firms that adopt the "stakeholder management philosophy" do so by systematically paying attention to their stakeholder's interest, also called "stakeholder orientation" (Berman et al., 1999, p. 488). Stakeholder orientation can be seen as a continuum, with firms systematically paying very little attention to their stakeholders on one end, and firms giving stakeholders very much attention on the other (Brickson, 2007;

Jones et al., 2007). We say that firms that find themselves on the latter end of the spectrum adopt a *broad* stakeholder orientation. Some studies suggest that this orientation is such a fundamental property of an organization, that it is closely related to its *identity* (Brickson, 2005, 2007) and *culture* (Jones et al., 2007).

Many studies have sought to answer the question how firms prioritize one stakeholder over the other and looked at such factors as the stakeholder's power, legitimacy, and urgency (Mitchell et al., 1997). However, such an approach does not explain why some firms are more oriented towards stakeholders than others *in general*. Besides, it suggests that stakeholder management is about *balancing* the interests of stakeholders, while the basic premise of instrumental stakeholder theory is that such tradeoffs should be avoided (Parmar et al., 2010). Accordingly, the concept of stakeholder orientation is not about paying attention to finding the right balance, but about paying attention to finding occasions where stakeholder interests are aligned (Parmar et al., 2010; Tantalo and Priem, 2014). With this focus, we also explicitly distinguish ourselves from adjacent studies equating a stakeholder approach with attention to social issues (Margolis and Walsh, 2003), corporate social responsibility (Barnett and Salomon, 2006), or sustainability (Anderson and Bateman, 2000).

With the relevance of stakeholder orientation firmly established by instrumental stakeholder theory, many scholars have sought for antecedents of stakeholder orientation. Why do firms differ in the extent to which they give attention to their stakeholders? Adams et al. (2011) provide an explanation on the individual level, suggesting that the personal values, or stable beliefs and goals, of a firm's board members are an important factor. Using Schwartz's (1992) personal value operationalization, they show how "higher achievement, power, and self- direction values and lower universalism values" prevent managers from adopting a broad stakeholder orientation (Adams et al., 2011, p. 1348). This finding resonates with the important connection between identity and culture, and stakeholder orientation pointed out by Brickson (2005, 2007) and Jones et al. (2007), since values play a prominent role in both of those concepts. De Luque et al. (2008) have shown that CEOs' emphasis on stakeholder values indeed yield higher firm performance, confirming the importance of values. The importance of individuals in a firm's stakeholder orientation is furthermore stressed by the finding that CEO succession is an important cause for a shift in orientation (Kochan and Rubinstein, 2000).

Crilly and Sloan (2012) provide a cognitive explanation for variation, stating that a firm's stakeholder orientation is the result of its manager's conceptualization of the relation between the firm and its stakeholders. In this view, the attention that managers give to stakeholders is a consequence of the firm's dominant logic, either perceiving "relationships with stakeholders as involving risk, conflict and trade-offs",

or involving "opportunity, interdependence, and mutual benefit" (Crilly and Sloan, 2012, p. 1175).

Yet another explanation of a firm's stakeholder orientation is the external pressure that is exerted on the firm. Kacperczyk (2009) shows the influence of shareholder control: when shareholders increase a firm's protection to takeovers, these firms adopt a broader stakeholder orientation. Shropshire and Hillman (2007) show that firms tend to adopt a stakeholder orientation that is generally perceived as the standard in an industry. When this average stakeholder orientation in an industry shifts, this presents an isomorphic pressure for firms to follow the industry, especially for younger and smaller firms since those firms lack other sources for legitimacy. Crilly (2011) shows how pressures can come both from external stakeholders and internal stakeholders, such as the pressure exerted by parent companies in the case of subsidiaries.

Finally, firm performance itself, besides being a consequence of stakeholder orientation, can also be its cause (Hillman and Keim, 2001). Exactly because stakeholder orientation is expected to increase firm performance, low firm performance may be seen as a cue that a firm has to broaden its stakeholder orientation.

2.2.3 Stakeholder-oriented capabilities

While research focusing on stakeholder orientation has showed firms the importance of adopting a broad stakeholder orientation, it has provided little guidance on how to do so. Therefore, this chapter is focused on the question which capabilities a firm requires in order to successfully translate a broad stakeholder orientation into firm performance. Generally, organizational capability refers to "the ability of an organization to perform a coordinated set of tasks, utilizing organizational resources, for the purpose of achieving a particular end result" (Helfat and Peteraf, 2003, p. 999). Therefore, we define stakeholder-oriented capability as *the ability of an organization to perform a coordinated set of tasks, utilizing organizational resources, for the purpose of simultaneously creating value for multiple stakeholders, thereby avoiding resorting to tradeoffs between the interests of stakeholders*. As such, stakeholder-oriented capability is about the attributes of those firms that succeed in translating a broad stakeholder orientation into firm performance. It should be noted that this is very different from the concept of "stakeholder capabilities" (Garriga, 2014), which refers to the empowerment of stakeholders, increasing their freedom to take actions as they deem them appropriate (Garriga, 2014, p. 494). While stakeholder capabilities have been defined as a characteristic of stakeholders (Garriga, 2014), we define our stakeholder-oriented capabilities as a characteristic of the focal firm creating value for its stakeholders.

The resource based view tries to explain heterogeneity in firm performance through its resources and capabilities (Barney, 1991; Helfat and Peteraf, 2003, p. 998; Teece et al., 1997). This chapter focuses on the capabilities a firm needs to have in order to translate a broader stakeholder orientation into firm performance. Jones et al. (2007), in presenting their concept of a "stakeholder culture", assume that the routines, beliefs, and values of a firm are aligned. In practice however, there may not be a complete alignment. For example, a firm's beliefs and values may be other-regarding, while its routines and the capabilities these routines constitute may be focused in the firm's self-interest (Parmigiani and Howard-Grenvile, 2011). We argue that it is important to distinguish between stakeholder orientation and stakeholder-oriented capabilities, precisely because the routines do not necessarily match the beliefs and values of a firm. While a firm's stakeholder orientation reflects its *ambition* to simultaneously create value for multiple stakeholders, firm performance can only follow if the firm succeeds in putting this ambition into practice, in other words: when the firm has succeeded in developing the necessary stakeholder-oriented capabilities. We summarize our conceptualization in Figure 2.1 below.

Figure 2.1: stakeholder-orientated capabilities mediating the link between stakeholder orientation and firm performance

2.3 Method

In order to identify stakeholder-oriented capabilities, we present a single case study of a firm that recently made the strategic decision to broaden its stakeholder orientation, but reports difficulties in translating this orientation into creating stakeholder value. We use an extreme case as an opportunity to develop theory (Yin, 2013): by selecting a case which scores high on stakeholder orientation but low on stakeholder value creation we increase the odds that this case entails important information on the factors that play a role in the translation of stakeholder orientation into stakeholder value creation. The case study approach allows us to explore this relatively new territory with the detail and nuance that comes with qualitative research (Bettis et al., 2015).

We perform a case study of the Dutch Distribution System Operator (DSO) owner called Alliander N.V., which was introduced in chapter 1 (see pages 13-14 of this dissertation). Alliander's high ambition to become a stakeholder firm and the reported implementation barriers provide the motivation to use this organization as a case.

The present case study consists of a multiple method case study, consisting of interviews, document analyses and participative observation. Twenty-three interviews were held with managers and directors of Alliander, which were structured as follows. The first part of the interview was guided by the question: how would you characterize Alliander in terms of its stakeholder orientation? The second part of the interview addressed the question: how would you characterize the gap between Alliander's stakeholder orientation and its current practice of simultaneously creating value for multiple stakeholders? The third and last part of the interview was guided by the question: what barriers, if any, cause the gap between Alliander's stakeholder orientation and its current practice of simultaneously creating value for multiple stakeholders? In order to prevent guiding the interviewees too much, the interviews were not structured beyond these three guiding questions (Flick, 2009; Glaser and Strauss, 1967). In addition to interviews with employees, three interviews with stakeholders were used to check the validity of the Alliander interviews. The three stakeholders were the Dutch ministry responsible for regulating the energy sector and the other two large Dutch DSOs.

The interviews were carried out in 2012 and 2013. The interviews took around one/ one and a half hours and were all recorded and transcribed into an average of 20 pages of double spaced notes per interview. In the results section we use citations directly from these transcripts. The interviewees will remain anonymous; each interviewee is given a number to show from which interview the citations originate. In addition to the interviewee number, its organization will be mentioned to distinguish between Alliander and stakeholder interviews.

In a first wave, the interviewees were chosen from different departments to get a wide range of viewpoints from within Alliander. Of this first wave, all interviewees except for two were senior managers at the time they were interviewed. In a second wave, all executive directors were asked to participate in the study. Out of 27 directors, 12 agreed and were interviewed. I have been stationed at Alliander one day per week during the study, from July 2012 to June 2013, to work on this research. This enabled me to enrich the collected material with observations and additional data from informal talks at the coffee machine and over lunch. Annual reports and policy documents were used to verify interview results and observations.

The data from the interviews were analyzed by coding all parts that related to the link between stakeholder orientation and stakeholder value creation (Glaser and

Strauss, 1967). This coding scheme was revisited as the project went along, until it resembled the experiences of the interviewees and convergence was reached (Eisenhardt, 1989). To increase the validity, we actively searched for data that would disconfirm earlier observations.

2.4 Results

In 2009 Alliander came into existence as an independent organization. Before that, the tasks of the distribution system operator were carried out within a larger vertically integrated electric utility. With its independence, Alliander gained the opportunity to set out a strategy for its own.

Alliander used this opportunity to adopt a very broad stakeholder orientation. Alliander states its mission in the 2011 annual report as: 'We strive for a better society in those regions with which we are connected'. By targeting the society as a whole, Alliander adopts a very broad definition of relevant stakeholders in its mission statement, a typical element of a broad stakeholder orientation (Jones et al., 2007). This observation about Alliander's stakeholder orientation was supported in the interviews. When asked about organizational characteristics that are typical for Alliander in the interviews, many managers mention its attention to stakeholders. This is reflected in the breadth of the responsibilities that they ascribe to Alliander. The government defines a strict task for DSOs: they have to provide gas and electricity and in return receive a standard fee for each household that is served. Alliander's managers and directors, however, include a much wider spectrum of responsibilities than just the task of delivering gas and electricity. A good example is the opportunity that they see for Alliander in playing a *leading* role in the transition towards decentralized and sustainable energy production. Alliander's peer, Enexis, confirms this image: '*It shows […] that Alliander tends to seek out, or even cross, the boundaries of what a DSO should do, regarding energy saving, facilitation of decentralized energy production, and so on*' (Interview 19, Enexis).

When Alliander's managers describe its ambition, it is striking how quickly they add that this ambition is far from being realized at the moment. They point out that several capabilities need to be developed before it is able to translate the stakeholder orientation into creating stakeholder value. Managers criticize how colleagues are still inclined to decide on their own what is good for their stakeholders. A typical example is the observation that some employees state that Alliander has 'no stakeholders, merely EAN-codes' (codes for the physical electricity connections in

households). The interviewees were asked to formulate what they think are the barriers to simultaneously creating value for multiple stakeholders. The reported barriers proved to originate from various levels. The remainder of this section describes the barriers as they were reported in the interviews, grouped by the levels of the sources of these barriers: the individual, the firm, and the system. Table 2.1 below summarizes the barriers, provides examples of how the barriers manifest themselves according to the interviewees, and shows what percentage of interviewees mentioned the barrier. Below we describe the barriers and show how many among the twenty-three Alliander interviewees mentioned that specific barrier.

Table 2.1: Overview of barriers to simultaneously creating value for multiple stakeholders

Barrier types	Examples of manifestations	Frequency
Individual level		
Skill problem	Lack of creativity, empathy, and courage, lack of stakeholder-issue specific expertise	43%
Awareness problem	Lack of sense of urgency	26%
Firm level		
Priority problem	Allocating resources at managing for stakeholders comes at the expense of other resource demands	57%
Alignment problem	Lack of alignment in responses to stakeholder issues	35%
Culture problem	Shared norm of providing the solution yourself, shared norm of avoiding risks	35%
System level		
Legacy problem	The industry has a tradition that is self-oriented	43%
Legitimacy problem	Deviating from the norm is controversial	70%

2.4.1 Individual level

Ten out of twenty-three interviewees point out that simultaneously creating value for multiple stakeholders is a skill problem. Specific competences are necessary to be able to manage for stakeholders, like creativity, courage, and empathy: '*If you cut electricity from a bakery on Easter Friday, one of his busiest days of the year, you're clearly not being empathic*' (interviewee 12, Alliander). The interviewees argue that this issue is specifically important for Alliander, because of its aging workforce: '*Our employees are relatively old […] we see that this makes that some employees find it hard to keep up*

with all the changes' (interviewee 8, Alliander). Interviewees focusing on personal characteristics see translating stakeholder orientation into firm performance as a matter of changing people. Lifting the barrier would require hiring new people, or changing the current employees for example by providing training.

Another barrier on the individual level is the observation of several interviewees that some people 'just don't think' about managing for stakeholders. Six out of twenty-three interviewees identify an awareness problem. In this view, managers might posses the right skills to simultaneously take multiple stakeholders into account, but do not fully realize this potential because the sense of urgency to simultaneously take multiple stakeholders into account is lacking: '*There is no sense of urgency*' (interviewee 3, Alliander).

2.4.2 Firm level

Thirteen out of twenty-three interviewees see simultaneously creating value for multiple stakeholders as a matter of setting the right priorities. They argue that allocating resources to managing for stakeholders comes at the expense of other resource demands. Managing for stakeholders is considered labor intensive. '*It's a question of manpower, the processes require a lot of attention*' (interviewee 1, Alliander). Managing for stakeholders is seen as requiring innovative solutions, and innovation demands resources: '*You have to take substantial risks, because you're busy developing innovative solutions*' (interviewee 8, Alliander). What makes the demand for resources even larger is the tendency of innovative projects to suffer from 'scope creep': additional goals are added and expectations are increased to an unrealistic extent. An interviewee describes this phenomenon in relation to the projects in which Alliander removes gas pipes made from gray iron. Gray iron is an inferior material that caused an incident in 2008 in which a residence exploded, after which the Dutch supervisor obliged the DSOs to replace these pipes in the coming decades. When digging up these pipes, Alliander has the opportunity to make more adjustments in line with stakeholder desires, but where do you draw the line? '*[…] we have to remove gray iron within a certain timeframe, and if you start digging you might as well replace the medium voltage power transmission cables, and the low voltage power transmission cables. You might even consider combining the efforts with telecommunication, installing optical fiber cables […] let's do it all at once because this saves the customer a lot of worries*' (interviewee 8, Alliander).

Another problem that is considered to come with a focus on innovative solutions is that it gets in the way of incremental improvements of existing products and

services. Innovative solutions require substantial changes in the design of business processes, while incremental improvements require a predictable environment and stable business processes: '*It is very complicated to do our normal work as cheaply and efficiently as possible, which requires standardization, operational excellence, lean and mean, and that is totally opposed to doing experiments*' (interviewee 9, Alliander). These interviewees see stakeholders as 'noise' disturbing the efficient operation of everyday business. In their view, the extent to which the firm manages for stakeholders can only increase at the expense of operational excellence. Accordingly, focusing on simultaneously creating value for multiple stakeholders implies that other strategic issues obtain lower priorities.

Eight out of twenty-three interviewees observe that acting upon stakeholder interests is not done effectively because of a lack of alignment within the organization. If different managers have different perspectives on how to act on stakeholder claims, the organization becomes less effective in managing for stakeholders: '*What we see is that we have ideas about things, but that we are not clear and univocal about it […] The moment that we are not clear about ideas internally, it becomes hard to talk about those ideas externally [...] the ideas are not communicated, and the issue manager at public affairs has to formulate an answer the moment the phone rings or a microphone is put under his nose*' (interviewee 20, Alliander). These interviewees see translating stakeholder orientation into firm performance as a matter of alignment. As long as different departments don't communicate the information they have about stakeholders, it is hard to accommodate their desires: '*A couple of years ago we were astonished by these farmers with greenhouses, that in a short time frame all decided to start using a cogenerator […] They wanted to feed their surplus energy back into our net but it wasn't designed for that so we had to restrict that […] Afterwards, I found out that our account managers saw this coming, but there was no communication between our account managers and our asset managers, otherwise we could have taken the necessary precautions*' (interviewee 7, Alliander).

Eight out of twenty-three interviewees identify a barrier in the firm's culture, the norms that Alliander's managers share. In Alliander, building the image of possessing all relevant knowledge for a certain problem is stimulated and rewarded. Stakeholder involvement, on the other hand, inherently implies that a manager acknowledges not possessing all relevant knowledge. The manager must dare to admit that the knowledge of stakeholders is necessary to find the most suitable solution. This is contradictory to the shared norm that managers should possess the relevant knowledge themselves: '*No one wants to admit in a meeting that he doesn't get it […] It's something that you*

notice, that people have the feeling that they cannot admit such a thing because of their reputation' (interviewee 9, Alliander). Another shared norm is that risks should be avoided, by following strict procedures. Managing for stakeholders however may include searching for collaborative and innovative solutions, which does not fit within strict procedures aimed at avoiding risks. The shared norm is that following procedures comes first: '*It's a culture of rules and procedures […] without looking at the underlying stakes*' (interviewee 1, Alliander).

2.4.3 System level

Ten out of twenty-three interviewees identify a barrier in the legacy of the industry as a whole. Because of their history as monopolists, all DSOs are used to having a knowledge lead on their stakeholders: '*It's the history of the firm. We have an incredible knowledge advantage as a monopolist: we will tell you what's good for you, we manage the underground infrastructure which no one else can see, we will make the decisions*' (interviewee 10). Besides that, the background as monopolists imprinted that reliability is of utmost importance. This limits the room for finding innovative ways to simultaneously create value for multiple stakeholders: '*I think that change is always difficult, but if I look at our industry specifically, we have the additional handicap that we have a background as a public service where everything has to be extremely reliable, we have to score straight A's*' (interviewee 8, Alliander).

Sixteen out of twenty-three interviewees identify a legitimacy barrier. Alliander can only change if that change is accepted by its surroundings. One aspect that stands out is Alliander's role as a public service provider. Residents are bound to the DSO that serves their region, which makes the societal 'license to operate' important, and comes with expectations by the community, media, and politicians. Moreover, these expectations are influenced by decades of exposure to the free market paradigm: '*They tend to think "a monopoly should be as small as possible, it should mind its own business, you should leave the rest to the free market, you can not abuse your power as a monopolist for all those fun things you want to do for society*"' (interviewee 13, Alliander). Besides, solutions that are very innovative sometimes reach the boundaries of what is possible within the current laws. There may be collaborative solutions, but if these solutions are not conforming to current law, this proves to be a barrier. An example of this barrier is the following: Alliander is willing to accommodate stakeholders that want to use solar panels that are placed not on their own roof but on someone else's, which current laws did not foresee: '*This is happening right now. We are working on an innovative project where residents own solar panels, but not on their*

own roof. The law is not ready yet for this kind of decentralized energy production' (interviewee 6, Alliander).

Above, our case study showed seven barriers to translating stakeholder orientation into creating stakeholder value originating in three levels. While some of these barriers may be specific for Alliander, others may have implications on a more general level. Therefore, the next section confronts our findings with existing literature to identify three stakeholder-oriented capabilities that have a wider applicability to firms that aim to simultaneously create value for multiple stakeholders: *entrepreneurial* capabilities, *coordination* capabilities, and *legitimacy* capabilities.

2.5 Discussion: stakeholder-oriented capabilities

Jones et al. (2007) theorized how each firm has a certain stakeholder culture. This stakeholder culture concerns the beliefs, values, and practices of a firm "that have evolved for solving problems and otherwise manage stakeholder relationships" (Jones et al., 2007, p. 137). Corporate egoist firms have beliefs, values, and practices that explain why those firms are typically self-regarding, while those of instrumentalist and moralist firms explain why those firms are other-regarding. Our case study showed that, contrary to Jones et al.'s (2007) assumption, firms do not necessarily have a consistent stakeholder culture: the practice of creating stakeholder value does not necessarily match the ambition to do so. As a result, a broad stakeholder orientation is not a sufficient condition for improved firm performance as implied by instrumental stakeholder theory. The current study provided an example of an organization that encountered barriers to translating stakeholder orientation into creating stakeholder value. In this section, we confront these findings with existing stakeholder literature to generalize the barriers into more widely applicable stakeholder-oriented capabilities that firms require in order to be able to simultaneously create value for multiple stakeholders.

2.5.1 Entrepreneurial capabilities

Simultaneously creating value for multiple stakeholders requires firms to identify those opportunities where the interests of stakeholders align, thereby avoiding having to resort to trade-offs (Parmar et al., 2010; Tantalo and Priem, 2014). The respondents in our case study stressed that finding such opportunities requires specific skills from individual employees, including creativity, empathy, and courage to take on the risks

that are involved with finding such new opportunities. This closely resembles the skills that traditionally have been associated with entrepreneurship (Shane and Venkataraman, 2000). In other words, the findings of our study associate a broad stakeholder orientation with entrepreneurial values. This is surprising, since earlier studies argued that entrepreneurial values are associated with the exact opposite: *shareholderism*, or a narrow stakeholder orientation (Adams et al., 2011; Agle et al., 1999). Directors "whose values are more entrepreneurial" (Schwartz, 1992) are said to be more likely to "endorse strategies that benefit shareholders" (Adams et al., 2011). The interviewees in our study however, when asked about what needs to change in order to better translate stakeholder orientation into firm performance, argue that it is exactly this 'entrepreneurial spirit' that is needed to get a more outward oriented firm. These interviewees criticize the way in which individuals in their firm are currently occupied with reducing risks and isolating their primary processes from external influences as much as possible.

This goes to the core of what it *means* to successfully adopt a stakeholder approach. Does it mean that universalistic values should precede over more traditional business values, as suggested by Adams et al. (2011) and Agle et al. (1999)? Our study suggests the opposite: it is the entrepreneurial spirit that allows firm to be successful in satisfying the needs of stakeholders. Indeed, successfully managing for stakeholders implies seeing external influences as an opportunity to create value, versus a potential threat that needs to be reduced (Crilly and Sloan, 2012). Managers that focus on wealth (Rokeach, 1972) and economic responsibilities (Aupperle, 1984), exactly the values related by Agle et al. (1999) to narrow stakeholder orientation, leads them to seeing the environment not as a potential threat but as an opportunity for value creation, indicated by Crilly and Sloan (2012) as an important condition for a broad stakeholder orientation. Hence, while too much of it may lead to short-term shareholderism, the creation of value is crucial to instrumental stakeholder theory (Parmar et al., 2010) and some form of entrepreneurial values are indispensable.

Entrepreneurial capabilities are the capabilities of a firm to find innovative solutions where the interests of stakeholders are aligned, thereby avoiding resorting to trade-offs between the interests of stakeholders. With this understanding of entrepreneurial capabilities, we propose the following:

> *Proposition 1: A firm requires entrepreneurial capabilities to translate a broad stakeholder orientation into simultaneously creating value for multiple stakeholders*

Developing entrepreneurial capabilities may have implications for the shared norms that characterize a firm. A firm's ability to create stakeholder value depends on its

ability to effectively engage in stakeholder interactions (Freeman, 1984, p. 69 and further). These interactions might entail different levels of stakeholder participation, for example by providing information to stakeholders, consulting stakeholders when making decisions, or even co-decide (Green and Hunton-Clarke, 2003; Greenwood, 2007). The managers and directors of the firm in our case study mainly have an engineering background. Engineers are known to be oriented towards practical, hands-on solutions (Tonso, 2006). Indeed, in this firm we saw that the prestige of these managers and directors partly depended on the practical 'engineering' solutions that they had to offer to the challenges the firm faces. Engaging in a process that involves stakeholders to collaboratively identify solutions to challenges is typically not well aligned with this disposition of engineers. We expect that other firms, even if they are not characterized by an engineering culture as the firm in our study, may be susceptible to this phenomenon. The prestige of managers in general is based on being "directive and controlling" (Carmichael, 1995). The shared norm is that managers should be persistent, decisive, and vigorous. Again, this disposition of managers does not typically align very well with engaging in processes that involve stakeholders in collaboratively identifying solutions. The capability to engage with stakeholders to identify new opportunities that prevent having to resort to tradeoffs as such is another part of the entrepreneurial capabilities that are necessary in order for a firm to successfully translate a broad stakeholder orientation into firm performance.

2.5.2 Coordination capabilities

The capability perspective stresses the importance of coordination amongst individual tasks (Helfat and Peteraf, 2003). From our data it shows that for a firm adopting a broad stakeholder orientation, coordination becomes even more of an issue. Two important ways in which coordination becomes even more important are the following. Firstly, coordination between departments that share relations with the same stakeholders is crucial. This is in line with earlier findings that locally generated responses without firm wide coordination may result in a decoupling of stakeholder orientation and firm performance (Crilly et al., 2012, p. 1429). Secondly, the focus on the creative effort of avoiding tradeoffs between stakeholders asks for coordination with other strategic priorities. Instrumental stakeholder theory is primarily about avoiding making trade-offs between the interests of various stakeholders by finding creative and innovative solutions that make every stakeholder better off (Freeman, 1984; Parmar et al., 2010). Paradoxically, it requires a tradeoff within the firm to be able to devote enough time and effort in finding new opportunities for value creation

that avoid having to resort to tradeoffs between the interests of stakeholders. The interviewees in our study typically interpret this tradeoff in the following terms: the more you are occupied with engaging with stakeholders and adopting your products and services towards the outcome of stakeholder dialogues, the less you are able to focus on gradually improving existing products and services. One of the strategic aims of the firm is to improve its 'operational excellence'. Employees from all levels are asked to continuously and gradually improve existing processes. Stakeholders and specifically their changing demands as identified in stakeholder dialogues, from this point of view, are seen as a barrier to improving the firm's operational excellence. Therefore, paying attention to stakeholders clearly requires coordination between this priority and other priorities that ask for attention.

The entrepreneurial efforts described above take place in the context of different (groups of) individuals, which are at the same time trying to pursue other strategic priorities. Coordination capabilities are the capabilities of a firm to align these (groups of) individuals, so that other strategic priorities do not conflict with the aim to simultaneously create value for multiple stakeholders. With this understanding of coordination capabilities, we propose the following:

> *Proposition 2: A firm requires coordination capabilities to translate a broad stakeholder orientation into simultaneously creating value for multiple stakeholders*

2.5.3 Legitimacy capabilities

The conventional knowledge is that a broad stakeholder orientation helps firms to support their license to operate (Bosse et al., 2009; Choi and Wang, 2009). Laplume et al. (2008, p. 1177) go so far as saying: "stakeholder management's greatest contribution may lie not with efficiency but with effectiveness through enhanced legitimacy (Heugens et al., 2002; Meyer and Rowan, 1977)", and "legitimacy is known to produce stakeholder support and create environmental stability (Suchman, 1995)". Surprisingly, our results show how a broad stakeholder orientation may at the same time jeopardize this exact same license to operate. When a firm does not act in the interest of its stakeholders, these stakeholders might organize actions that lead to reputational damage and financial loss for this firm. This may even be the case when the firm actually aims to satisfy various stakeholders, as long as these stakeholders are convinced that their interests are not taken into account. Efforts to take stakeholders into account do not necessarily result in stakeholders perceiving themselves being taken into account. Such a concern was expressed by the firm in our study, which explicitly aims to act in the interest of society as a whole: "*who are we to decide what*

is best for the society?" And: "*who are we to spend all this money doing fun stuff, with as an excuse that it serves the interest of the society?*" This is part of why interviewees see the legitimacy problem as a barrier. An example that illustrates this well is the effort of the firm to introduce the smart meter, an electronic device that can be monitored and controlled from a distance that replaces conventional electricity meters. The firm tried to serve the interest of the society by installing smart meters that are believed to have an important role in the transition towards a more sustainable electricity system. That same society however came into action to prevent further installments of smart meters, because the public feared an infringement of their privacy (Hoenkamp et al., 2011).

Adopting a broad stakeholder orientation may differ from what's considered the norm in a certain industry. Deviating from the norm may jeopardize a firm's legitimacy (Shropshire and Hillman, 2011), which our findings confirm. The capital providers of a firm can be skeptical about efforts that on the surface appear to have no direct relation with the profits of the firm itself. In our case, managers mentioned that adopting a broad stakeholder orientation is punished by capital suppliers because they consider such a strategy to be riskier, which they want to see compensated in a higher interest rate on the capital they supply. Even if in practice the strategy is less risky instead of more, as long as the capital suppliers perceive this differently, the burden is on the firm to convince the skeptics.

Taking stakeholders into account is seen as a way to increase a firm's legitimacy. Surprisingly, aiming to serve the interest of stakeholders may jeopardize a firm's legitimacy in the eyes of those exact stakeholders. Legitimacy capabilities are the capabilities of a firm to justify its strategy by convincing skeptics of the merits of their broad stakeholder orientation, and the capabilities to prevent a gap from arising between the extent to which they take stakeholders into account and the extent to which stakeholders perceive themselves as being taken into account. With this understanding of legitimacy capabilities, we propose the following:

> *Proposition 3: A firm requires legitimacy capabilities to translate a broad stakeholder orientation into simultaneously creating value for multiple stakeholders*

2.6 Conclusion

The present study shows that the supposed consistency between beliefs, values, and practices as supposed by Jones et al. (2007) does not have to hold in practice. Indeed, the inconsistency of a firm's stakeholder culture is implied when a firm experiences a

gap between its ambition to simultaneously satisfy the needs of multiple stakeholders and its actual behavior. Our study proposes three stakeholder-oriented capabilities which a firm needs to have in place in order to align its routines with its broad stakeholder orientation. These three types of such capabilities are entrepreneurial capabilities, coordination capabilities, and legitimacy capabilities. While a firm's stakeholder orientation reflects its *ambition* to simultaneously create value for multiple stakeholders, firm performance can only follow if the firm succeeds in putting this ambition into practice, in other words: when the firm has succeeded in developing the necessary stakeholder-oriented capabilities. With this contribution, we add to knowledge on the challenges on adopting a stakeholder approach. These insights help explain the variance that is seen in studies aiming to relate stakeholder orientation and firm performance (Berman et al., 1999; Choi and Wang, 2009; Clarkson, 1995; Hillman and Keim, 2001; Preston and Sapienza, 1990), and add to recent studies addressing the question *how* firms create value for stakeholders (Garcia-Castro and Aguilera, 2015; Tantalo and Priem, 2014). Firms need the right stakeholder-oriented capabilities in order to translate a broad stakeholder orientation into improved firm performance, and as such we provide an insight into the conditions that determine whether stakeholder theory is or is not instrumental.

It is quite common in instrumental stakeholder theory to use the stakeholder orientation of a firm and its capability to simultaneously create value for multiple stakeholders interchangeably. Our findings however suggest that it is important to distinguish between the two. This distinction is relevant when trying to explain variation in performance between firms that adopt a broad stakeholder orientation. Where previous studies conclude that the firms apparently decoupled their orientation from their routines (Crilly et al., 2012), we would argue that some of these firms might actually *try* to adopt a broader orientation, but are not successful in developing the necessary capabilities that come with such an orientation. Our results can assist managers in appreciating the complexity of simultaneously creating value for multiple stakeholders.

2.6.1 Managerial implications

We observe that the stakeholder approach, although not always in those terms, has an important influence on the way managers define their role, but not always as it was intended. It is striking that the interviewees see managing for stakeholders as a zero-sum game. The interviewees are convinced that satisfying stakeholder needs must come at the expense of something else. They regard managing for stakeholders as a very labor-intensive process, which requires substantial reallocation of resources. To be

able to become more other-regarding, operational excellence and reliability are named amongst the most prominent 'victims' of increasing the attention to stakeholders. Instrumental stakeholder theory is originally presented as being about creating win-win situations by identifying those opportunities where the stakes of different stakeholders align (Freeman, 1984). Paradoxically, to prevent tradeoffs between stakeholders, firms apparently need to make tradeoffs inside the firm. This implies that a top management team needs to be aware that the decision to adopt a broader stakeholder orientation may be (temporarily) at odds with other strategic priorities.

2.6.2 Limitations and future research

Our findings suggest that entrepreneurial values might be related to both a broad *and* a narrow stakeholder orientation. Agle et al. (1999) found mixed results when studying the moderating effect of CEO values on stakeholder salience and already indicated that more research was necessary to understand these phenomena (Agle et al., 1999, p. 520). Apparently, the phenomena are too complex to be captured by merely a distinction between self-interested and other-regarding individuals (Adams et al., 2011). Our findings provide a new perspective that might clarify the ambiguous relation between values and simultaneously creating value for multiple stakeholders. Future studies might show that there exists a curvilinear relation between entrepreneurial values and the creation of stakeholder value, with too little or too much entrepreneurial values forming a barrier to creating stakeholder value. Another explanation might be that there exist several types of entrepreneurial values, of which some are related to a broad stakeholder orientation and some to a narrow stakeholder orientation.

A limitation of our study is that it is based on a single case. Studying other firms that have decided to broaden their stakeholder orientation but encounter difficulties in translating this orientation into firm performance might prove useful for confirming or refining the framework we presented. Also, studying the firm in a relative short timeframe of a year as we did has its limits. Future longitudinal studies may prove useful in determining whether there is a specific pattern in stages firms encounter after deciding to adopt a broader stakeholder orientation, analogous to a previous study that showed a sequence in stakeholder saliency over the organizational lifecycle (Jawahar and McLaughlin, 2001).

The firm in our case had particular reasons to adopt a broad stakeholder orientation: its shares are owned by governmental bodies (Brickson, 2005), it experienced

unanticipated resistance in the smart meter rollout (Hoenkamp et al., 2011), and it was free to choose its own strategy after it was unbundled from other utilities. Although these motives may be rather specific for this case, we expect other firms that decide to adopt a broad stakeholder orientation to encounter similar challenges. By confronting the barriers in our case with existing literature we found evidence for stakeholder-oriented capabilities that *all* firms need to develop in order to translate a broad stakeholder orientation into improved firm performance. However, firms will differ in the extent to which they already posses such capabilities *before* deciding to adopt a broader stakeholder orientation. As such, different firms will have to look into the specificities of their own case to find the exact implications of our results.

Sometimes strategic decisions lead to unanticipated resistance by stakeholders. This chapter contrasted earlier studies on stakeholder theory with a case study of an organization with a high ambition to satisfy stakeholders but which reports problems of realizing this ambition. The results provided insights on why it is so hard to simultaneously satisfy the needs of multiple stakeholders and proposed that organizations require three stakeholder-oriented capabilities to put such an ambition into practice: entrepreneurial capabilities, coordination capabilities, and legitimacy capabilities.

Where this chapter focused on the challenge of simultaneously satisfying the needs of multiple stakeholders, the next chapter will focus on potential tools that aid in addressing this challenge. Operational research is a scientific domain that has traditionally been employed with developing tools that support stakeholder management. To identify which tool could be the most suitable for overcoming the specific barriers that organizations encounter when trying to create stakeholder value, the next chapter provides a systematic review of operational research studies that have been concerned with stakeholders.

Chapter 3

Potential solutions: a review of operational research tools that support simultaneously satisfying the interests of multiple stakeholders*

While chapter two provided more knowledge on the challenge of simultaneously satisfying the needs of multiple stakeholders, this chapter focuses on potential tools that aid in addressing this challenge. Operational research has traditionally been engaged with developing tools that support stakeholder management. To identify which tool could be suitable for the specific barriers that organizations encounter when trying to create stakeholder value, this chapter provides a systematic review of 140 operational research studies that have been concerned with stakeholders. Content analysis of these articles shows the potential of different operational research traditions for improving the rational, organizational process, and transactional level of an organization's stakeholder management capability.

* An adapted version of this chapter is invited for publication as De Gooyert, Rouwette, Van Kranenburg, and Freeman, *Reviewing the role of stakeholders in operational research, a stakeholder theory perspective*, European Journal of Operational Research (forthcoming). An earlier version of this chapter was presented as De Gooyert, Rouwette, Van Kranenburg, and Freeman, *Reviewing the role of stakeholders in operational research, opportunities for group model building*, at the 31st Internal Conference of the System Dynamics Society, Cambridge, Massachusetts, USA, 2013.

3.1 Introduction

More and more organizations try to balance the interest of various stakeholders (Freeman, 1984; Parmar et al., 2010). Organizations trying to balance the interest of various stakeholders may address amongst others employees, customers, suppliers, and the community as a whole. As mentioned in chapter 1, *stakeholder theory* is a tradition in management literature that tries to expand our knowledge on the challenges these organizations face (see pages 11-12 of this dissertation). In this domain, hundreds of articles have been making considerable advances in theorizing why organizations should take stakeholders into account (Phillips et al., 2003), which stakeholders should be taken into account (Mitchell et al., 1997), and what effects organizations may expect as a result (Jones, 1995).

The *implementation* of stakeholder theory has been found to be one of its largest challenges (Laplume et al., 2008). Kaler (2006) argues that, while organizations may seek to balance the interests of different stakeholders, this is too analytically complex to be carried out in practice. The tools that enable organizations to find the right balance are supposedly lacking. Wolfe and Putler (2002) point out that achieving this balance becomes even more complex if stakeholder groups themselves are heterogeneous. Margolis and Walsh (2003) argue that managers face additional tasks, including answering stakeholder issues themselves, or controlling, monitoring, and disciplining the stakeholder engagement of others.

Operational research is a scientific tradition that is specifically aimed at developing tools to aid problem solving or decision-making. Management literature is focused on *expanding knowledge*, which in the case of stakeholder theory involves knowledge about the problems that organizations encounter when trying to balance the interest of different stakeholders. The main focus of operational research on the other hand has been *problem solving or decision support*, to an increasing extent including problems or decisions in which stakeholders have an important role. Although stakeholder theory and operational research were closely linked when stakeholder theory originated (Freeman, 1984), apparently, there is a currently a large gap between the management literature domain and the domain of operational research, with the latter developing the tools that the first indicates are lacking.

This chapter revolves around the research question: *which tools does operational research provide that allow organizations to improve their capacity to simultaneously satisfy the needs of multiple stakeholders*? By providing an overview of operational research tools we put organizations in a better position to improve the extent to which they simultaneously satisfy the interests of multiple stakeholders. There are two

contributions to the literature that this chapter makes. On the one hand, the exact nature of the role of stakeholders in operational research often remains implicit. By analyzing commonalities and differences between various operational research applications on the topic 'stakeholders', we aim to make the role of stakeholders explicit and facilitate the development of the field in this respect. The second contribution stems from the observed gap between management literature and operational research. We review how developments in operational research relate to challenges that organizations face as identified in management literature. By analyzing patterns in applications of operational research we identify four traditions in which operational research has been helping organizations to balance the interest of various stakeholders: 'optimization', 'insights in trade-offs', 'understanding the problem', and 'managing the boundaries'. In stakeholder theory, Freeman (1984) distinguishes between a rational, an organizational process, and an interaction level of an organization's stakeholder management capability. By relating these three levels from stakeholder theory with the various traditions in operational research, we show how the two domains are linked. As such, this chapter provides an overview of tools that have been developed to put organizations in a better position to simultaneously satisfy the interest of multiple stakeholders. With this chapter we aim to contribute to closing the gap between two domains that were closely linked when stakeholder theory originated (Freeman, 1984) but apparently have drifted apart over the last decades: management literature focusing on *problems* that organizations deal with and operational research focusing on advancing *solutions*.

In the remainder of this chapter we first provide background on stakeholder theory and operational research, followed by a description of the method used for our literature review, a note on the current gap between stakeholder theory and operational research, and the results in terms of the four categories of operational research that were identified in the literature review. The chapter ends with a conclusion and a discussion of the implications of our results for stakeholder theory and operational research.

3.2 Background: stakeholder theory and operational research

3.2.1 Stakeholder theory

Stakeholder theory has been shortly introduced in chapter 1 (see pages 11-12 of this

dissertation). Since the origin of stakeholder theory, many answers have been given to the question which stakeholders should be taken into account (Mitchell et al., 1997). One major distinction that has been made is between the wide and the narrow definition of stakeholders (Freeman and Reed, 1983, p. 91). A stakeholder in the narrow sense is any identifiable group or individual on which the organization is dependent for its continued survival (i.e. employees, customer segments, certain suppliers, key government agencies, shareowners, particular financial institutions, as well as others are all stakeholders in the narrow sense of the term). A stakeholder in the wide sense is any identifiable group or individual who can affect the achievement of an organization's objectives or who is affected by the achievement of an organization's objectives (i.e. public interest groups, protest groups, government agencies, trade associations, competitors, unions, as well as employees, customer segments, shareowners, and others).

Organizations may have different reasons to adopt the goal of balancing various stakeholders' interests: because it is in the interest of the organization or because they see taking stakeholders into account as having a value of its own. Jones argues that organizations adopting stakeholder theory "will have a competitive advantage over firms that do not" (1995, p. 422). These firms will reduce amongst others "agency costs, transactions cost, and costs associated with team production […] monitoring costs, bonding costs, search costs, warranty costs, and residual losses" (Jones, 1995, p. 422). Other organizations see stakeholders as having an intrinsic value and they see taking stakeholders into account as their moral obligation. This is reflected in 'the normative cores of stakeholder theory' as stressed by Donaldson and Preston (1995). Phillips et al. (2003) show that these normative cores include the common good (Argandoña, 1998), feminist ethics (Burton and Dunn, 1996; Wicks et al., 1994), risk (Clarkson, 1994), integrative social contracts theory (Donaldson and Dunfee, 1999), property rights (Donaldson and Preston, 1995), Kantianism (Evan and Freeman, 1988), the doctrine of fair contracts (Freeman, 1994), and the principle of stakeholder fairness (Phillips, 1997, 2003).

Freeman (1984) considers an organization to possess stakeholder management capabilities when it is able to combine three levels of analysis, inspired by Allison's analysis of decision making (1971). On the *rational* level, organizations must be able to identify all relevant stakeholders and their stakes, resulting in correct stakeholder maps. On the *organizational process* level, organizations must have routines in place to take these stakes into account in their operating procedures. These routines aim to translate the stakeholder map into specific strategic decisions. On the *transactional level*, organizations must bargain to balance the interest of stakeholders to achieve the organization's purpose. An organization's stakeholder management capability depends on its ability to allocate resources to interactions with stakeholders.

3.2.2 Operational research

Operational research has been shortly introduced in chapter 1 (see pages 12-13 of this dissertation). Since its inception, operational research has been dealing with complex problems, which often involve multiple stakeholders. While some of the interests of these stakeholders may be aligned, substantial complexity arises from those instances where the interests of stakeholders are conflicting. The importance of stakeholders is increasingly acknowledged in operational research. However, what this importance exactly is often remains implicit. This is problematic, since the implications of the specific importance of stakeholders vary widely between situations. For example, this chapter will show the importance of avoiding a gap between what a problem owner may perceive as the interests of their stakeholders, and the interests these stakeholders would identify themselves. Teams working on OR studies tend to have converging mental models, leading to a biased perception of their stakeholders' interests and involvement of these stakeholders from an early stage may be necessary to successfully address their concerns.

When looking at the topic of the respective fields, the fields of management literature and operational research seem to complement each other. To show the difference between the two we use the topology of Donaldson and Preston (1995). After reviewing stakeholder theory, Donaldson and Preston (1995) show how management literature is focusing on expanding knowledge of how organizations balance the interests of various stakeholders (descriptive), what the impact is of 'taking stakeholders into account' on 'firm performance' (instrumental), and what the arguments are for the statement that stakeholders should be taken into account (normative). What they deem the most elemental however, is that stakeholder theory should be managerial because in the end managers have to make an actual decision that somehow balances the interest of various stakeholders (Donaldson and Preston, 1995). The irony is not lost on us that this *managerial* aspect of stakeholder theory that Donaldson and Preston (1995) consider to be underappreciated in *management* literature, can be found in operational research which is managerial in the sense that it focuses on the development of tools that can be deployed to actually implement the idea that interests of stakeholders should be balanced.

Table 3.1: 'The stakeholder' in management literature and operational research (adapted from Donaldson and Preston, 1995)

Management literature	Operational research
Descriptive: how do organizations balance the interests of various stakeholders?	*Managerial*: what tools can be deployed to balance the interests of various stakeholders? What are the effects of deploying those tools?
Instrumental: what is the correlation between 'taking stakeholders into account' and 'firm performance'?	
Normative: what are the arguments for the statement that stakeholders should be taken into account?	

To study how management literature and operational research are linked, we now turn to our systematic review of operational research applications on the topic 'stakeholder'. We identify four operational research traditions. By relating these traditions to the three stakeholder management capability levels from stakeholder theory, we show how these domains are linked.

3.3 Method for literature review

Laplume et al. (2008) provided a review of stakeholder theory based on content analysis of articles in management journals. We try to stay close to their method, but instead of reviewing stakeholder theory articles in management journals we review applications referring to the topic 'stakeholder' as reported in operational research journals. We apply a method similar to Laplume et al. (2008) and present our results in a similar fashion to be able to provide comparable insights in the progress of stakeholder theory in management journals and the progress of applications of operational research regarding stakeholders.

We confined our sample to leading journals on applications of operational research. We included journals that belong to the *Journal Citation Reports - Science edition 2011* subject category 'operations research & management science', yielding 77 journals. We narrowed the selection to those journals that have an impact factor of 0.800 or higher, confining the selection to 41 journals. We excluded all journals that focus on a particular domain (e.g. *Transportation Science*, S*afety Science*), as well as journals that focus on conceptual contributions (e.g. *Mathematical Programming*, *Journal of Global Optimization*). This resulted in the final selection of eleven journals:

Annals of Operations Research, *Computers & Operations Research*, *Decision Support Systems*, *European Journal of Operational Research*, *Expert Systems with Applications*, *Interfaces*, *Journal of the Operational Research Society*, *Management Science*, *Omega*, *Operations Research*, and *OR Spectrum*.

A search in *Web of Knowledge* for articles in these journals, published up to 2012, with the word 'stakeholder' appearing in the title, abstract, or keywords (author keywords as well as 'keywords plus'), yielded 171 articles. We then repeated the search using the same criteria with *ScienceDirect*, resulting in four additional articles. A third search with *EBSCOHost* did not result in additional articles. We excluded all articles that did not describe a real-world or hypothetical application of operational research such as literature reviews, descriptive research articles and conceptual articles. This resulted in a final selection of 140 articles, as shown in Table 3.2 below.

Table 3.2: Articles with topic 'stakeholder' in operational research journals

	AOR	COR	DSS	EJOR	ESA	I	JORS	MS	O	OR	ORS	Total
Year												
1991						1				1		2
1992			1									1
1993												0
1994			1			1		1	1			4
1995			1	1			1					3
1996												0
1997				1		1	1					3
1998				1			1					2
1999						1	3			1		5
2000		1					2					3
2001				6								6
2002			1			1		1				3
2003								1				1
2004				3		1	1			1		6
2005			1		1	1	3		1			7
2006			1	4			1					6
2007	1	1	1			3	5	1				12
2008			1	2	1		3	1	4			12
2009				5	5	1	1		1			13
2010			2	2	3	1	2	1	1			12
2011			2	2	7	1	4			1	1	18
2012			2	4	7	3	4		1			21
Total	1	2	14	31	24	16	32	6	9	4	1	140

Legend: AOR = Annals of Operations Research; COR = Computers & Operations Research; DSS = Decision Support Systems; EJOR = European Journal of Operational Research; ESA = Expert Systems with Applications; I = Interfaces; JORS = Journal of the Operational Research Society; MS = Management Science; O = Omega; OR = Operations Research; and ORS = OR Spectrum.

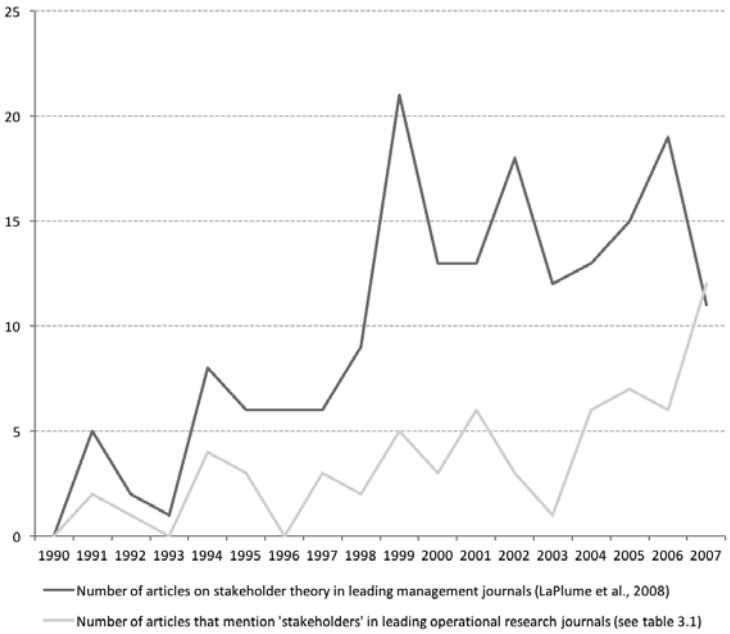
Similar to Laplume et al. (2008), we used content analysis (Krippendorff, 2004; Weber, 1990) to facilitate a structured and systematic analysis of the large volume of textual data. The coding was conducted iteratively, thereby forming a coding scheme from the data. By looking for differences and commonalities between the articles we came to the identification of four broad categories of operational research studies. The following elements were assessed for each article: whether the study was empirical or conceptual in nature; which operational research tools were applied; whether the study was mainly qualitative, quantitative, or both; whether the study was mainly based on the knowledge of experts or was focused on the participation of stakeholders; the domain on which the operational tool was applied; the stakeholders that were discussed in the article; the role of the stakeholders in the study; the main variables the study investigated; the result that the study reported.

3.4 'The stakeholder' in management literature and in operational research

When looking at the emergence of the stakeholder topic in applications of operational research, the similarity to the progress of stakeholder theory stands out. Although Freeman published his seminal work in 1984, leading management journals started publishing articles on stakeholder theory only in the early nineties, steadily increasing since then. The stakeholder topic in operational research also emerges in the early nineties, and while taking somewhat more time to develop mass, also steadily increases during the decades afterwards, see Figure 3.1.

We already observed one indication of the gap between management literature and operational research, namely the statement in management literature that tools for implementing stakeholder theory are lacking (Kaler, 2006). Another indication stemming from our review is the lack of references to stakeholder theory in the applications of operational research: just three of the 140 applications of operational research refer to Freeman (1984) or mention stakeholder theory (Sarkis, 1998; Turcanu et al., 2006; Macharis et al., 2012). This confirms that the gap between management literature and operational research has become large and has implications for both fields. By analyzing the specific relations between the advances in operational research and management literature, we aim to contribute to bringing the two domains closer together.

Figure 3.1: Comparable trends in management literature and operational research



3.5 Major traditions in operational research

After several iterations of coding the 140 applications of operational research, we concluded that there are four different traditions in which operational research has been adding value for organizations that want to satisfy the interests of various stakeholders: 'optimization', 'insights in trade-offs', 'understanding the problem', and 'managing the boundaries'. While many applications add value in more than one way, most applications have a distinctive focus and can be clearly associated with one of the four traditions. The four traditions are described in more detail below.

3.5.1 Optimization

One way in which operational research tries to help organizations that want to satisfy the interests of various stakeholders is by 'optimization'. These applications define goals and constraints, capture these in sets of mathematical relationships and provide a single best solution to a given problem. Typical methods used are goal programming,

mixed-integer linear programming, and neural networks. The methods are typically focused on quantitative aspects of problems. These applications are often expert based: the researchers may ask stakeholders about the characteristics of the problem, but after that they often formulate mathematical models on their own. Application domains vary widely, including amongst others new product development (Bordley and Kirkwood, 2004), workforce scheduling (Belien et al., 2012), and road pricing (Teodorović and Edara, 2007). These applications typically regard stakeholders as the ones that have an interest in the outcome of the model, or as those that determine the goal functions or constraints that have to be considered in the mathematical relationships, or as sources of uncertainties that form a difficulty that has to be met by the method.

3.5.2 Insights in trade-offs

The largest tradition is formed by the applications that try to help by providing insights in trade-offs. While the first tradition provides a single solution, these applications focus on *comparisons* of different alternatives on different criteria. These comparisons provide insights in how improvements in achieving one goal may hinder achieving another goal. Typical methods used are multi-criteria decision analysis (MCDA), analytical hierarchy process (AHP), analytical network process (ANP), data envelopment analysis (DEA), and 'fuzzy' variations of these methods. These fuzzy variations include a step in which verbal statements such as Likert items are translated into numbers (e.g. Chiou et al., 2005; Chou et al., 2006; Secme et al., 2009). The applications typically start from the idea that 'you cannot have it all', and facilitate 'how to divide the pie' between different stakeholders holding different objectives. These stakeholders often participate in carrying out the operational research application. For instance, the weighting of different criteria is elicited by asking stakeholders to make pairwise comparisons. Application domains vary widely, including amongst others portfolio management of R&D projects (Phillips and Bana e Costa, 2007), regional sustainable development (Cai et al., 2009), and health care delivery (Saaty, 1994). Stakeholders participate in various ways, including for example the identification of alternatives, the identification of criteria, the scoring of alternatives, and weighting the criteria.

3.5.3 Understanding the problem

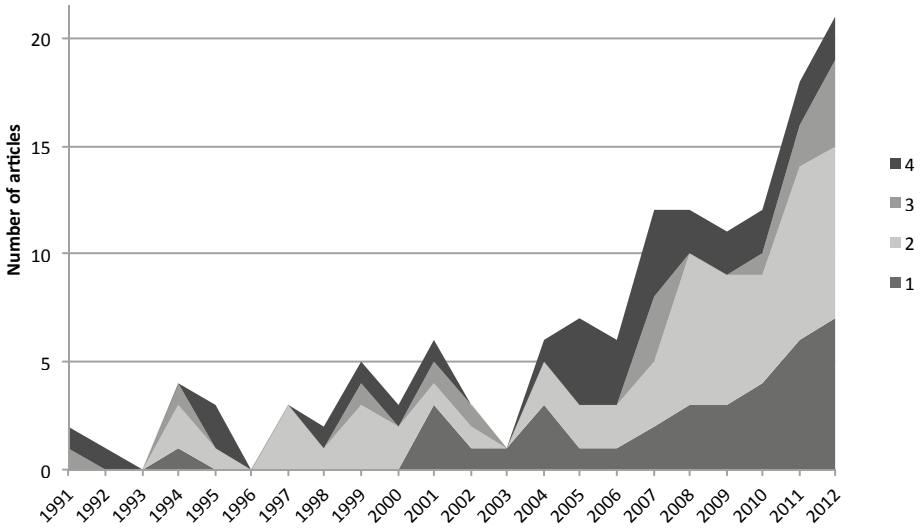
The third way in which operational research has been helping is by increasing the understanding of the problems at hand. The first two traditions take as their point of

departure that the researchers possess enough knowledge of the problem to be able to translate it into mathematical relations and numeric scores of alternatives. This third tradition does not assume that all relevant knowledge is available, takes one step back, and focuses on learning more about the problem. One goal of this approach is that by obtaining a better understanding of the problem, the researchers are able to facilitate 'dividing the pie', but they are also able to 'make the pie bigger'. Methods include discrete event simulation (DES) and system dynamics (SD) simulation. The role of stakeholders varies in this tradition, from merely being the client receiving the model output to participating in workshops in which model conceptualization is carried out as in group model building (GMB). Increased understanding is often nurtured by a structured process of analyzing the problem, for example by identifying all relevant stocks and flows and their causal relationships (SD and GMB) or identifying all relevant events, accompanying changes in states of the system, and relations between the events (DES). The resulting conceptual models are often graphically represented to facilitate discussion about which elements are relevant and which are not. Some applications continue by translating the conceptual model into mathematical relationships fit for quantitative analyses, while others focus on a qualitative understanding of the problem. Application domains again vary widely, including amongst others health care delivery (Lehany et al., 1999), risk assessment of oil operations (Merrick et al., 2002), and airline logistics (Den Hengst et al., 2007).

3.5.4 Managing the boundaries

The fourth tradition aims to aid decision making by managing the boundaries of problems. This tradition acknowledges that different viewpoints of an issue at hand need to be incorporated to be able to structure the problem, or because incorporating (minority) viewpoints is desired on ethical grounds. Methods typically include critical systems thinking (CST), soft systems methodology (SSM), and a group of methods labelled as community operational research (COR). Almost all applications are based on intensive participative processes, and often result in an increased qualitative understanding of the problem. This understanding may then be summarized in what is called a 'rich picture', a picture with different elements and their relations fitted to the problem. Application domains vary widely, including amongst others housing services for the elderly (Midgley et al., 1998), energy efficiency (Neves et al., 2009), and fitness-to-drive arrangements (Hindle and Franco, 2009). Figure 3.2 below shows the progress of the four traditions over time.

Figure 3.2: Progression of four 'stakeholder traditions' in operational research

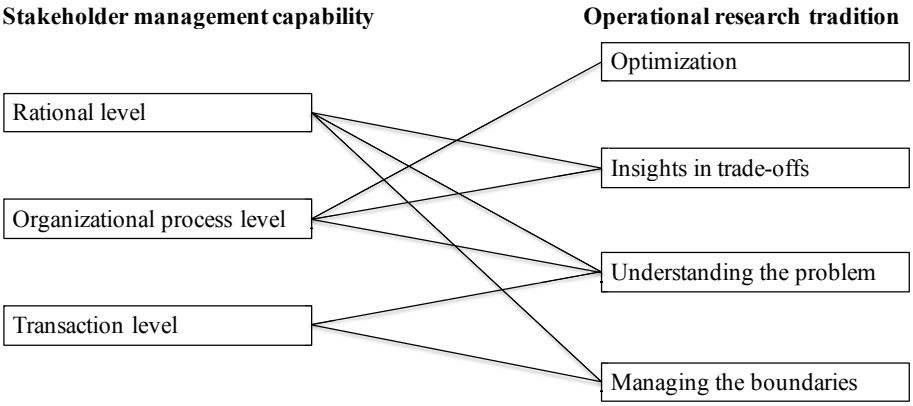


Note that the differences in the role of stakeholders in these four traditions are substantial. Stakeholders may be merely regarded as sources of uncertainty that have to be dealt with in 'optimization', while in 'managing the boundaries' viewpoints of stakeholders may be incorporated for no other reason than the intrinsic value of the stakeholder. Also note how these different roles that stakeholders have in operational research align with different strands of reasoning in stakeholder theory. As described earlier in this chapter, stakeholder theory distinguishes between a narrow and a broad identification of stakeholders (Freeman and Reed, 1983) and between instrumental (Jones, 1995) and moral (Phillips et al., 2003) arguments for adopting the goal of simultaneously satisfying the interests of various stakeholders. While 'optimization' seems to be based on a narrow definition of stakeholders and instrumental arguments of taking them into account, 'managing the boundaries' seems to be based on a broad definition of stakeholders and moral arguments of taking them into account. The other two traditions 'insights in trade-offs' and 'understanding the problem' appear to exist in different variations based on either broad or narrow definitions of stakeholders and on instrumental and/ or moral arguments of taking them into account.

3.6 The relation between stakeholder theory and operational research

Earlier in this chapter we showed that Freeman (1984) distinguishes between three levels of stakeholder management: an organization should have a correct stakeholder map (*rational level*), routines to take stakeholders into account (*organizational process level*), and it should have effective interactions with stakeholders (*transactional level*). Following this argument, operational research is only able to increase an organization's stakeholder management capability if it manages to facilitate either the rational, organizational process, or transactional level of stakeholder management or their combination. When considering the 140 applications of operational research in this review, it stands out that they aim to increase an organization's stakeholder management capability on different levels. These relations follow the pattern of the four identified traditions, see Figure 3.3 below.

Figure 3.3: Relations between stakeholder theory and operational research



The first tradition, 'optimization', assumes that much of the problem is already known and that aspects of the problem can be translated into mathematical relationships. 'Optimization' is not about getting a clearer view of an organization's stakeholder map, but is about translating knowledge about stakeholders into strategic decisions. Experts use a mathematical model to provide a single solution that may have implications for several stakeholders. Because this tradition focuses on calculating the benefits of specific strategic decisions, it overlaps with the organizational process level of Freeman's stakeholder management capability model (1984). The stakeholder

map is assumed to be known or at least not relevant to the problem on which this tradition focuses. Transactions with stakeholders are not facilitated in this tradition.

The second tradition, 'insights in trade-offs', also involves translating information about a problem into specific strategic decisions, thereby partly overlapping with the organizational process level. But even more central to these applications is eliciting stakeholder preferences, by involving them for example in the identification of alternatives, the identification of criteria, the scoring of alternatives, and weighting of the criteria. This tradition aims to increase knowledge on the various stakeholders and what exactly their stakes are. In that sense, these applications help the organization to improve its stakeholder map, improving the rational level of its stakeholder management capability.

The third tradition, 'understanding the problem', is the only tradition that encompasses elements of all three levels of stakeholder management capability. A stakeholder analysis is often part of the first stages of getting to understand the problem, potentially improving the rational level of an organization's stakeholder management capability. Stakeholders in this tradition are often participating in workshops aimed at increasing the knowledge about a problem. These workshops focus on interactions between an organization and its stakeholders, thereby improving the transactional level of an organization's stakeholder management capability. The model that is the result of the workshops in the end is used to identify specific strategic decisions, thereby improving the operational process level.

The fourth tradition, 'managing the boundaries', is mainly focused on the rational and the transactional level. This tradition seeks to incorporate many viewpoints in structuring a problem. Workshops that aim to facilitate developing a better understanding of these viewpoints may result in a better understanding of the stakeholder map of an organization, thereby improving the rational level of its stakeholder management capability. Even more central to the tradition, the workshops facilitate a multitude of interactions with stakeholders, thereby improving the transactional level.

We conclude that different traditions in operational research have different ways of adding value to organizations that seek to balance the interests of various stakeholders. Organizations that need to improve a particular level of their stakeholder management capability might want to look for operational research applications that focus on that level specifically. All levels are covered by the four traditions in operational research. Our conclusion is therefore that the statement that no analytical tools are available that aim to implement stakeholder theory (Kaler, 2006), is not supported by our review.

3.7 Conclusion

This chapter revolved around the research question: *which tools does operational research provide that allow organizations to improve their capacity to simultaneously satisfy the needs of multiple stakeholders*? A systematic review of 140 operational research articles found four categories of tools that aim to help organizations in this respect: *optimization*, *insights in trade-offs*, *understanding the problem*, and *managing the boundaries*. In *optimization*, goals and constraints are defined by sets of mathematical relationships that provide a single best solution to a given problem. *Insights in trade-offs*, the largest tradition, focuses on providing insights in how satisfying the interest of one stakeholder comes at the cost of the interests of others. *Understanding the problem* is aimed at structuring the problem at hand, thereby allowing 'increasing the size of the pie', in addition to just 'dividing the pie'. *Managing the boundaries* is focused on involving stakeholders, where intensive participative processes are used to give voice to minority stakeholders. By showing how these tools relate to the rational, organizational process, and transaction levels of stakeholder management we help organizations to select those tools that are suitable for those capabilities that an organization wants to develop further.

This chapter has several implications for stakeholder theory and operational research. By revealing the varying roles that stakeholders have in operational research studies, we allow future operational research studies to be more explicit in how they choose to take stakeholders into account, as well as acknowledging the implications that come with this choice. By linking the various roles that stakeholders play in operational research to stakeholder theory, we provide a step in bridging these fields. Stakeholder theory may benefit from the analytical methods that support the implementation of serving the interests of multiple stakeholders. Operational research may benefit from stakeholder theory because "it serves to integrate human elements into what might otherwise be pure quantitatively-based management science models" (Parmar et al, 2010, p. 428) and it helps operational research in addressing ethical sensitivity (Theys and Kunsch, 2004, in Parmar et al., 2010, p. 430).

This chapter provided an overview of operational research tools that help organizations in simultaneously satisfying the interests of multiple stakeholders. Different tools have shown to be helpful for improving either the rational, the organizational process, and/or the transactional level of an organization's stakeholder management capability.

The previous chapter described the tendency of decision makers inside an organization to hold a biased perception of their organization's environment. Based on the current chapter's overview it seems that the tradition understanding the problem *may be helpful in overcoming this barrier. Therefore, the next chapter consists of a case study of an organization using strategy workshops in line with the operational research tradition of* understanding the problem *to explore the potential of such an approach for improving an organization's position to simultaneously satisfy the interests of multiple stakeholders.*

Chapter 4

A case study: facilitating the creation of a shared frame of reference of the Dutch energy transition with group model building*

Chapter two revealed that an important barrier to stakeholder management is the tendency of decision makers inside an organization to hold a biased perception of their organization's environment. Chapter three indicated that operational research presents tools that have the potential to support organizations to decrease such a bias, by including external stakeholders in a systematic structuring of specific problems that an organization and its stakeholders face. To explore the potential of such an approach, this chapter describes the analysis of eight video-recorded inter-organizational strategy workshops in the form of group model building sessions with external stakeholders that Alliander organized. This chapter examines the role of these meetings in constructing a shared frame of reference on strategic issues. A model of framing strategies that participants in the workshops used is presented to describe how the construction of a shared frame of reference in such a setting comes about.

* At the time of printing an adapted version of this chapter is in the third round of review as De Gooyert, Rouwette, Van Kranenburg, Freeman, and Van Breen, *Extending the strategic conversation; The role of open strategy in strategic sensemaking*, Long Range Planning. Earlier versions of this chapter have been presented as De Gooyert, Rouwette, Van Kranenburg, Freeman, and Van Breen, *Strategic cognition in transition? Individual mental model renewal in the energy industry* at the 74th Annual Meeting of the Academy of Management, Philadelphia, Pennsylvania, USA, 2014, and as De Gooyert, Rouwette, Van Kranenburg, Freeman, and Van Breen, *The forming of shared cognition in business ecosystems, collective sensemaking and its influence on mental models*, at the 34th Annual Conference of the Strategic Management Society, Madrid, Spain, 2014, and at a workshop on Open Strategy, Oxford, UK, 2014.

4.1 Introduction

With the recent attention for strategy practices, theoretical advancements have been made in understanding how managers strategize and how this relates to strategic outcomes (Jarzabkowski, 2005; Jarzabkowski and Spee, 2009; Whittington, 1996). In this field, strategy workshops have been identified as an important practice that managers use when developing strategy (Bowman, 1995; Hodgkinson et al., 2006; Jarzabkowski and Seidl, 2008). Although the practice is widely adopted, research on strategy workshops shows mixed findings with scholars remaining skeptical about the potential of strategy workshops to realize their espoused purpose (Healy et al, 2013; Johnson et al., 2010).

The focus of research so far has been on *intra*-organizational strategy workshops (Whittington, 2006), little attention has been paid to the emerging phenomena of *inter*-organizational strategy workshops. This type of workshop is particularly interesting since it fits the wider development of the opening up of strategy (Chesbrough and Appleyard, 2007; Doz and Kosonen, 2008; Whittington et al., 2011). More and more organizations increase the transparency and inclusiveness of their strategy process, and inviting external stakeholders to collectively address strategic issues is one form that the open strategy phenomenon takes (Newstead and Lanzerotti, 2010).

Traditionally, strategy is considered to be both exclusive and secret (Whittington et al., 2011). This is consistent with the traditional scholarly understanding of organizations as entities that try to obtain exclusive access to resources to impose barriers to competition (Porter, 1980) and that try to sustain competitive advantage by waiting as long as possible before disclosing new strategies (Higgins and Diffenbach, 1989). Open strategy is a new phenomenon and it does not fit this current understanding of organizations. It "goes against the grain of conventional strategy thinking" (Whittington et al., 2011, p. 535) and therefore confronts scholars with new questions including 'how should we understand open strategy?' and 'what are the consequences of organizations opening up their strategy?' While theory-driven research uses a knowledge gap in a certain theory as a starting point, we perform a phenomenon-based study by using the puzzling observation of open strategy as a starting point (Von Krogh et al., 2012).

In the current study we use cognition literature to understand the open strategy phenomenon. The central thesis of this study is that open strategy can be understood as an occasion for collective sensemaking, facilitating the construction of a shared frame of reference between internal and external stakeholders (Cornelissen and Werner, 2014; Kaplan, 2008 Maitlis and Christianson, 2014; Weick, 1995). By focusing

on collective sensemaking, we build on the emerging literature that understands strategy workshops as an opportunity to align the mental models, or frames, of the participants (Healy et al., 2013; Narayanan et al., 2011; Walsh, 1995). Organizations are known to be prone to developing biased perceptions of their environment (Grant, 2003; Prahalad, 2004), and engaging in an open dialogue with external stakeholders may allow for *debiasing* (Day and Schoemaker, 2004; Pina e Cunha and Chia, 2007). After all, it is the external stakeholders' perceptions that define how an organization may create stakeholder value, and not those of the internal stakeholders (Freeman, 1984; Hart and Sharma, 2004; Laplume et al., 2008; Parmar et al., 2010). Inter-organizational workshops may play a crucial role in resolving differences in interpretations between internal and external stakeholders *before* strategic decisions have been implemented and turning back those decisions would come at great costs. If organizations want to create stakeholder value, it is of the utmost importance that they identify what stakeholders define as valuable. Open strategy as such brings stakeholder engagement to the forefront of the strategy process.

In this chapter, we illustrate our central thesis with eight instances of inter-organizational strategy workshops. Our first research question is: to what extent do inter-organizational strategy workshops achieve their espoused purpose of building a shared frame of reference? Our second research question is: how does this forming of shared cognition come about, i.e. what strategies do the strategists use when collectively making sense? Studying open strategy from a cognitive perspective allows us to make two main contributions. The answer to the first research question provides a contribution to the strategy as practice literature (Hodgkinson et al., 2006; Jarzabkowski and Seidl, 2008; Whittington, 1996), by crossing the boundary of the organization and investigating the effects of *inter*-organizational workshops, and by linking the workshop practices to their outcome, which is rare (Jarzabkowski and Kaplan, 2015). The answer to the second research question provides a theoretical contribution to the sensemaking and framing literature (Benford and Snow, 2000; Cornelissen and Werner, 2014; Kaplan, 2008; Weick, 1995), by providing a refinement of earlier models on how the construction of a shared frame of reference comes about.

4.2 Background

4.2.1 Strategy workshops as practice

Strategy workshops are a widely diffused practice in the organizational landscape. With a large-scale survey, Hodgkinson et al. show that almost half of UK organizations have a strategy workshop once a year (Hodgkinson et al., 2006, p. 482). Observations

of workshops have informed studies within the strategy-as-practice research stream, where research questions revolve around what managers actually *do* (Chia, 2004; Jarzabkowski, 2005; Jarzabkowski and Spee, 2009; Whittington, 1996). These strategy practices are understood as recurring activities that are both constrained and enabled by their context (Fenton and Langley, 2011). In this stream, meetings in general are regarded as *strategic episodes*, in which existing strategic orientations are either stabilized or destabilized (Jarzabkowski and Seidl, 2008).

Research on workshops remains skeptical about the extent to which such meetings realize their espoused purpose. Johnson et al. (2010) showed the relevance of ritual theory in explaining the dynamics of strategy workshops, putting the question of the instrumental intent of a workshop in a new perspective (Johnson et al., 2010, p. 1611). More generally, the idea of strategy as something that can be planned is questioned, with the argument that strategy is something that emerges (Mintzberg, 1994). Healy et al. (2013) show that workshops may or may not result in the desired outcomes, depending on their design.

This article extends this line of research on strategy workshops as practice, by analyzing observations of meetings. We complement this line by looking at a special case of strategy workshops that is gaining importance: inter-organizational strategy workshops as a form of open strategy (Whittington et al., 2011).

4.2.2 Open strategy

More and more organizations increase the transparency and inclusiveness of their strategy process, for which the term 'open strategy' has been coined (Chesbrough and Appleyard, 2007; Doz and Kosonen, 2008; Whittington et al., 2011). The openness of strategy is a continuum rather than a binary phenomenon (Whittington et al., 2011, p. 535), and comes in many forms. With *jamming*, organizations increase the openness of their strategy by involving employees from all corners of the organization, for example to identify shared values within the organization that can be used to inform the top management team's strategic agenda (Chesbrough and Appleyard, 2007; Palmisano, 2004). Providing *strategy updates* to external stakeholders is another form of open strategy, focusing more on transparency towards external stakeholders (Higgins and Diffenbach, 1989; Santema et al., 2005). The present chapter involves yet another form of open strategy, namely that of *inter-organizational strategizing*, i.e. the organization of strategy workshops between different organizations for the collaborative exploration of strategic opportunities and threats. This form of open strategy focuses on the inclusion of external stakeholders in the strategy process. As such, our case is in line with an earlier example of inter-organizational strategizing

described by Wilkinson and Elahi (2003, cited in Whittington et al., 2011): in 2002 Shell organized the RiskWorld project in which strategists from various organizations collaboratively developed scenarios (Wilkinson and Elahi., 2003).

While open strategy certainly has similarities with open innovation and crowdsourcing (Chesbrough and Appleyard, 2007), our case will show that there are important differences as well. In open innovation, external stakeholders are involved in the phase of generating ideas on new products (Chesbrough and Appleyard, 2007). Including external stakeholders increases the data pool from which innovative ideas may be drawn, thereby increasing the likelihood of identifying ground breaking new products. The role of open strategy can be similar, if it is used to increase the number of strategic alternatives that a top management team subsequently can choose from (Newstead and Lanzerotti, 2010; Stieger et al., 2012). The current study however focuses on another area in which open strategy may prove to be valuable, namely in that of *sensemaking* (Weick, 1995). We adopt an 'interpretive' perspective (Islam, 2015, p. 465): instead of seeing the strategy process as about information gathering and processing where external stakeholders provide additional information that decision makers can evaluate, we see the strategy process as dealing with *meaning*, where the inclusion of external stakeholders may support making sense of the environment (Islam, 2015, p. 465). By adopting an interpretative perspective focused on sensemaking we find ourselves in an area where the role of open strategy deviates from that of open innovation. Focusing on the cognitive dimension of strategy resonates with the observation that the role of workshops as a forum for aligning mental models through dialogue may be more important than their role of following a fixed sequence of steps resulting in a single strategic decision (Hodgkinson et al., 2006, p. 489).

4.2.3 Cognition in strategy

We focus on cognitive processes since these have been shown to have an important effect on the success of strategy formulation (Cornelissen and Werner, 2014; Hodgkinson and Sparrow, 2002; Kaplan, 2011; Narayanan et al., 2011; Walsh, 1995). In order to define a successful strategy, individuals responsible for strategy formulation need to understand their environment. This understanding is captured in simplifications in the form of deeply held beliefs that are highly stable over time, also called a manager's 'mental model' or 'frame' (Cornelissen and Werner, 2014; Daft and Weick, 1984; Narayanan et al., 2011; Walsh, 1995). On the one hand, such a frame is functional because without simplifications managers would suffer from an overload of information (Simon, 1947). Moreover, not every detail about the environment is

necessary to come up with a strategy that is 'good enough' (Simon, 1947). On the other hand, such a frame is dysfunctional when the environment changes and frames no longer provide an accurate representation (Barr et al., 1992; Tripsas and Gavetti, 2000). Especially managers that work in a turbulent environment are prone to this 'cognitive inertia', since their environment is highly dynamic and beliefs may therefore quickly be rendered obsolete (Hodgkinson, 1997; Porac et al., 1989; Reger and Palmer, 1996; Tripsas and Gavetti, 2000).

Within organizations, frames tend to converge over time, resulting in a high degree of shared cognition between the people within the boundaries of the organization (DiMaggio and Powell, 1983; Hodgkinson and Sparrow, 2002; Chattopadhyay et al., 1999). Convergence is caused directly by managers influencing each other in both formal and informal discussions or 'framing contests' (Berger and Luckman, 1966; Kaplan, 2008; Salancik and Pfeffer, 1978). Besides, convergence comes about indirectly via all kinds of ways in which beliefs about the environment get embedded in the organization, for example through standard operating procedures, knowledge management systems, the structure of the organization, and even the identity of the organization (Hodgkinson and Sparrow, 2002). In this way, frame convergence in organizations leads to a systematic bias in how managers in the organization perceive their environment. In management literature this bias has been called *peripheral blindness* (Day and Schoemaker, 2004; Grant, 2003; Pina e Cunha and Chia, 2007; Prahalad, 2004).

4.2.4 Peripheral blindness: the smart meter controversy

Peripheral blindness manifests itself in conflicts with external stakeholders over strategic issues that can be traced back to a difference in *interpretations*. These conflicts can inflict huge costs on organizations, both in terms of finance needed to turn back decisions after they have been implemented and in terms of reputational damage that follows after a high profile stakeholder conflict. An example of such an interpretation conflict in the energy industry is that of the rollout of *smart meters* in The Netherlands (Hoenkamp et al., 2011). In general, a smart meter is "an advanced energy meter that measures consumption of electrical energy providing additional information compared to a conventional energy meter" (Depuru et al., 2011, p. 2736). Interpretations of what a smart meter exactly is however, both in terms of the technical specifications and the goals it helps to achieve, have varied widely between stakeholders (Hoenkamp et al., 2011). For consumers, smart meters hold the promise of realizing savings, for example by allowing them to use lower energy tariffs outside peak hours, by providing more feedback on energy consumption, and by allowing

decentralized energy production, i.e. with solar panels (Krishnamurti et al., 2012; Paetz et al., 2012). On the other hand, consumers are concerned about the health, safety, and security risks imposed by smart meters (Depuru et al., 2011; McKenna et al., 2012). At the same time, energy retailers see opportunities for providing additional services, NGO's see smart meters as a crucial step in the transition towards a low-carbon economy, and distribution system operators focus on the role smart meters may have in diminishing the administrative burden of monitoring and controlling the energy infrastructure (Hoenkamp et al., 2011; McKenna et al., 2012). In the Netherlands, the energy industry overlooked the concerns of consumers and neglected the goals that smart meters could help achieve for consumers, not because they intentionally disregarded public interest but simply because of their biased perception of what the public interest exactly was. The unanticipated resistance that resulted from this caused a delay of eight years, with all the work of a standardization consortium thrown away and replaced by a whole new standardization process (Hoenkamp et al., 2011, p. 275-277).

4.2.5 Stakeholder engagement

Clearly, there was no shared frame of reference between the stakeholders in the case of the Dutch smart meter rollout. In an analysis of the case, it is argued that the "principles of participation, transparency, and openness" would have helped preventing such a conflict (Hoenkamp et al., 2011, p. 281) and it is the central thesis of the current chapter that this is where open strategy could play a role. The stakeholder engagement literature makes a clear distinction between several levels of dealing with stakeholders, varying from informing or consulting stakeholders to involving stakeholders in strategic decision making (Greenwood, 2007; Morsing and Schultz, 2006). In this literature it is stated that two-way communication is necessary for "the company to understand and concurrently adapt to [their stakeholders'] concerns" (Morsing and Schultz, 2006, p. 328). Open strategy in the form of inter-organizational strategy workshops may facilitate such a dialogue and thereby resolve the differences in frames between stakeholders, as such debiasing strategists' perceptions and reinforcing an organization's capacity to create stakeholder value.

Peripheral blindness constitutes a cognitive gap between internal and external stakeholders. More and more organizations aim to increase the extent to which they explicitly address the concerns of their stakeholders (Parmar et al., 2010) and the cognitive gap between them hinders this. If a group of internal stakeholders formulates a strategy to address external stakeholder concerns, this will be based on the internal stakeholder's interpretation of their environment, not the external stakeholder's

interpretation. In other words, the organization's strategists will decide on the basis of what they believe is good for the external stakeholders, not on what the external stakeholders believe is good for them. This is where open strategy comes in. By providing occasions for collective sensemaking, open strategy helps aligning mental models between internal and external stakeholders, thereby bridging their cognitive gap. In this way, open strategy improves an organization's position to address stakeholder concerns. The value of open strategy is then to increase the cognitive diversity in the strategy formulation process, thereby reducing peripheral blindness. Our study provides an illustration of this aspect of open strategy and is a first exploration of how this comes about. Accordingly, the central thesis of this study is that open strategy helps in aligning the mental models of internal and external stakeholders. With this thesis we understand open strategy as a process of collective sensemaking resulting in a shared frame of reference (Cornelissen and Werner, 2014; Mohammed et al., 2010; Weick, 1995). We see inter-organizational strategy workshops as a form of multi-stakeholder learning dialogue (Calton and Payne, 2003), where differences in interpretations are resolved *before* strategic decisions have been implemented and resulting conflicts come with costs of turning back those decisions and repairing reputational damage (Amason, 1996; De Wit et al., 2012).

4.3 Method

4.3.1 Case description

Peripheral blindness is especially problematic in turbulent environments: "…strategic mistakes are most likely to occur in turbulent environments because mental models are not updated quickly enough to keep pace with environmental change" (Reger and Palmer, 1996: 36, see also Nadkarni and Narayanan, 2007). Turbulence provides a signal that a sector is close to a 'strategic inflection point', after which the 'rules of the game' change, making strategies based on the former circumstances inaccurate (Burgelman and Grove, 1996; 2007). Strongly held beliefs may be rendered obsolete by changing circumstances (Hodgkinson, 1997). Making the right adjustments to frames in such a context is difficult because managers are confronted with an overwhelming amount of new information and these new cues are often equivocal - they can simultaneously have multiple meanings (Daft and Weick, 1984; Thomas et al., 1993).

To learn more about open strategy as a process of collective sensemaking, we performed an in-depth case study of an organization that increased the openness of their strategy in such a turbulent environment. Therefore, we turn to the energy

sector, which experiences turbulent times in many countries. We use the Dutch energy sector as a case, as it is a typical example of a sector where current beliefs are confronted with dissonant information. The clash between the current system and the explicit desire to change generates uncertainty, which gives room for "signifying work and meaning construction" (Benford and Snow, 2000, p. 614). Before focusing on the organization where we carried out our case study, we provide some more background on the Dutch energy system.

Typical for the Dutch energy system is the large gas reserve in the northern part of the country. The Dutch government currently derives a substantial part of its income from exploiting this reserve (Kern and Smith, 2008). Besides, the international fossil industry has a considerable representation in the Netherlands with the headquarters of the Anglo-Dutch multinational oil and gas company Royal Dutch Shell. Moreover, the captains of industry from the fossil energy sector have historically had a role in setting the Dutch energy policy (Kemp et al., 2007: 325).

The Dutch government has been developing policies for renewable energy production since the 1973 oil crisis (Junginger et al., 2004; van Rooijen and van Wees, 2006). Recently it has set new goals for energy conservation and renewable energy production as a part of its 2012 coalition agreement (Cabinet Rutte-Asscher, 2012). The aims imply considerable changes, with a goal for renewable energy production of 16% in 2020, compared to 4.7% in 2013 (PBL, 2012). Because of the necessary changes the government coined the term 'energy transition' (Kemp, 2010). The term transition is generally defined as "a gradual, continuous process of change where the structural character of a society (or a complex sub-system of society) transforms" (Rotmans et al., 2001: 16). The term energy transition came into wider use with the 2005 governmental 'taskforce energy transition', which described the energy transition as a structural change towards a more sustainable energy system (Smith and Kern, 2009). The current design of the Dutch energy system conflicts with the recently set goals and the industry is now in the middle of the social construction of the energy transition, with different parties trying to make sense of what the energy transition exactly is (Hendriks, 2009: 346; Kemp et al., 2007: 316). This equivocal nature of the energy transition makes it a subject that is very suitable for examining open strategy as a process of collective sensemaking (Weick, 1995).

The organization that we follow in our study strives to play a leading role in facilitating the Dutch energy transition: Alliander N.V., which was introduced in chapter 1 (see pages 13-14 of this dissertation). Alliander is involved in the rollout of smart meters in The Netherlands and amongst others, the huge unanticipated resistance experienced in that rollout motivated the organization to increase the openness of its strategy. Its recent annual report states that "Alliander wants to

facilitate the transition to a more sustainable energy system", and that "while the contours of the future energy system are already visible, the exact shape of things to come is still unknown". Therefore, "by working closely with customers, partners and government agencies, [they] are trying to anticipate trends and developments, wherever possible, in a responsible manner" (Alliander, 2012), which is closely in line with the role that inter-organizational strategy workshops could have as set out earlier in this chapter. Below, we follow how Alliander's internal and external stakeholders engage in inter-organizational strategy workshops to support the forming of a shared frame of reference with regard to the energy transition.

4.3.2 Data collection

Alliander organized eight inter-organizational strategy workshops, carried out in September and October of 2013. The workshops were designed with two goals in mind. On the one hand, the more stakeholders present in the workshops, the higher the cognitive diversity will be. On the other hand, the workshops had to be small enough to provide ample opportunity for interaction, since it is this interaction that might lead to managers convincing each other of what cues to attend to and which meaning to attach to them. Therefore, instead of organizing one large workshop, Alliander organized eight smaller workshops that had exactly the same design, the only difference being the participants that attended the workshops. This unique situation with eight workshops that are similar in design allows for a comparison across the workshops, both in terms of the process of the workshops and their outcomes.

The number of participants per workshop varied from eight to fifteen, with a total of 96 participants over all eight workshops, representing 19 internal stakeholders and 77 external stakeholders. The external stakeholders represented different groups: 25 represented services (consultants, bankers, lawyers), 18 industry (manufacturing, energy supply), 17 government (national, local), 8 infrastructure (transmission, distribution), and 9 other (research, NGO's). In each workshop two facilitators led the dialogue on trends and developments in the energy industry. The workshops took about five hours each. All workshops were video recorded from two different angles and consecutively transcribed, resulting in 80 hours of video recordings and 587 pages of transcribed dialogue.

4.3.3 Measuring the construction of a shared frame of reference

In order to explore whether open strategy leads to an increase in shared cognition, we measured the frames of the 96 participants both right before the workshop and right after the workshop with a closed format questionnaire. In cognition literature, several competing methods are used to elicit mental models (Daniels and Johnson, 2002: 78; Kellermanns, 2005; Kellermanns et al., 2011; Mohammed et al., 2010; Nicolini, 1999). Some researchers aim to maximize validity and try to avoid interviewer bias by staying as close as possible to respondents' verbalization of their mental models, e.g. with the repertory grid technique (Kelly, 1955; see for a recent application in the management domain Wright et al., 2013). However, this comes at the cost of rigor, and that is why other researchers use closed questions, which allow for a better comparison between respondents (Hodgkinson, 1997; 2002). Our design seeks a middle ground between rigor and relevance by using the recipe put forward by Hodgkinson (2002: 68) and Markoczy and Goldberg (1995: 309). We start with developing a 'pool of constructs' by performing a content analysis and we use these constructs to define closed questions with which we elicit the mental models of the participants. By combining content analysis with a quantitative survey, we provide a 'third-way' approach that combines the strengths of ideographic and nomothetic procedures while minimizing their weaknesses (Hodgkinson, 2002: 70) and we extend the line of managerial cognition research that combines multiple methods (Daniels et al., 1994, 2002; Liu et al., 2012).

We carried out a study on the content of mental models on the energy transition by studying newspaper articles that mention the energy transition. Similar to topic modeling (Chuang et al., 2013), we analyzed large quantities of texts to identify major themes across the documents. The issues found in the newspapers subsequently formed the basis for the structured questionnaires. We use Likert-type items to assess participants' frames, as previously done by for example Sutcliffe and Huber (1998). We asked the participants to fill out the questionnaire right before and right after the intervention, as previously carried out by for example Liu et al. (2012). A summary of the data used in this study is provided in Table 4.1 below.

It is important to stress that our argument is not that open strategy should result in participants agreeing on the importance of each item. In fact, even without agreeing on the importance of specific items, stakeholders may be well able to find shared solutions to problems. The extent to which the assessment of 47 individual items overlaps between stakeholders however does provide us with a coarse measure of the extent to which the workshops helped creating a shared frame of reference, and it is in this sense that the results will be used throughout this study.

Table 4.1: Sources of data used in this study

Variable	Data source	Analysis
Strategic issues in frames	162 articles from large Dutch newspapers on the subject 'energy transition'	Two rounds of coding, resulting in a list 47 key issues that form the 47 questions of the questionnaire used for measuring shared cognition forming
Shared cognition forming	Questionnaires that 86 participants of 8 strategy workshops filled out right before and right after the workshop, both with 47 likert-type questions	Non parametric tests of the questionnaires on the level of the 8 workshops
Shared cognition forming strategies	80 hours of video recordings of the 8 strategy workshops, translated into 587 pages of transcripts	Several rounds of coding the transcripts, resulting in a model of framing strategies

4.3.4 Energy transition frames

To take stock of the variety of mental models that exist on issues in the Dutch energy transition we analyzed articles in the five largest national daily Dutch newspapers that mention "energy transition". We included all articles published before 21 June 2013. The first article that mentions the energy transition appeared in 2003. As shown in Table 4.2 below we analyzed a total of 162 newspaper articles. To diminish the risk of imposing our own mental model on the data we engaged in a process of coding, in which we tried not to use prior expectations about the nature of the data. We consecutively performed one round of open coding and one round of selective coding, following the procedures as put forward in grounded theory (Glaser and Strauss, 1967). The round of open coding was used to analyze what *categories* of constructs related to energy transition. The round of selective coding was used to analyze which *constructs* within these categories can be found.

Table 4.2: Articles in five large Dutch newspapers that mention "energy transition"

Newspaper	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13[a]	Total
AD	0	0	0	1	3	0	0	0	0	0	1	5
NRC	1	0	3	8	16	4	4	6	2	6	8	58
Telegraaf	0	0	0	1	5	2	1	3	2	3	3	20
Trouw	0	0	1	9	8	3	4	10	4	4	3	46
Volkskrant	0	0	0	5	8	5	1	9	3	2	0	33
Total	1	0	4	24	40	14	10	28	11	15	15	162

[a] up to 21 June 2013

The first round of coding resulted in three distinct categories: strategic ends that may be served by the energy transition, technological means to bring about a more sustainable energy system (e.g. solar panels, blue energy) and policy means that could be implemented by different governmental bodies to speed up the transition (e.g. carbon taxation, subsidies on innovation). The second round of selective coding started from this categorization and produced a list of constructs in these three categories. We excluded items that were mentioned only once or twice. Next, two experts from the energy sector assessed the face validity of the items during interviews. Based on the feedback of these experts we made minor changes and this resulted in the final list of 47 items that is shown in Appendix B. The 47 items are all included in the questionnaire used for assessing the frames of the strategy workshop participants. For each item the question was "how important is [this item] for you with regard to the energy transition?" The closed questions were formatted as seven points Likert items, ranging from not important at all to extremely important.

The pool of constructs that we collected using newspaper articles on energy transition provided a diverse set of items suggesting that indeed there is substantial equivocality in the Dutch energy sector. Within this set there are substantial differences. Some articles for example clearly state that they see 'affordability of energy' as the strategic end that may be served by the energy transition, while other articles focus on how the transition may help to prevent problems for future generations. These ends are not only very different, they also seem incompatible: increasing the efficiency of coal plants for example would help to keep energy affordable, but may add to climate change problems that future generations would have to deal with.

4.4 Results

4.4.1 Increasing shared cognition in inter-organizational strategy workshops

The central thesis of this study is that open strategy can be understood as an occasion for collective sensemaking facilitating the construction of a shared frame of reference. We illustrate this in two steps below. Firstly, we show that indeed there is a higher shared cognition right after the workshops compared with right before. Secondly, a cross workshop comparison of framing strategies results in a model representing how the forming of a shared frame of reference comes about, which we illustrate with excerpts from conversations in the workshops.

Overall, the workshops resulted in a substantial increase in shared cognition. In Appendix C we show per issue whether there is shared cognition on its importance or not, both right before the workshop and right after (based on the 86 out of 96 managers that filled out a complete pre and post questionnaire). To determine whether there is shared cognition or not we use the procedure based on studies using panel data, which indicates that for seven-point Likert items an interquartile range of 1 or smaller signals shared cognition (Von der Gracht, 2012). Over all workshops there are 37 items on which there was shared cognition beforehand but no shared cognition afterwards, versus 78 items on which there was no shared cognition beforehand but shared cognition afterwards. This gives a McNemar test statistic of 15.98, well above a critical value of 10.83 (χ^2 distribution, df = 1, p = 0.001). This provides strong support for our central thesis that open strategy facilities the construction of a shared frame of reference. In other words, these results show that the inter-organizational workshops in our case did result in their espoused purpose of creating a shared frame of reference.

4.4.2 Framing strategies in inter-organizational strategy workshops

As can be seen in Table 4.3 below, there was a difference in the extent to which the eight workshops were successful in increasing shared cognition.

Table 4.3: Initial conditions and results per workshop

Workshop	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Overall initial shared cognition	64%	57%	57%	78%	57%	47%	36%	36%
Overall shared cognition lost	3	5	5	4	6	5	5	2
Overall shared cognition gained	11	9	10	5	11	11	9	12
Binomial test p value shared cognition gained	0.03	0.21	0.15	0.50	0.17	0.11	0.21	0.01
Initial shared cognition on strategic ends	High	Medium	Medium	High	Low	Medium	Low	High
Shared cognition change on strategic ends	Increase	Increase	Decrease	No change	No change	Decrease	No change	No change
Initial shared cognition on technological means	Medium	Medium	Medium	High	Medium	Medium	Low	Low
Shared cognition change on technological means	High	Medium	High	Low	High	Medium	Medium	High
Initial shared cognition on policy means	High	Medium	Medium	High	Medium	Low	Low	Low
Shared cognition change on policy means	Low	No change	Medium	No change	No change	High	Low	Medium

An important explanation of the difference in outcome is the initial extent to which a shared frame of reference already existed. The overall initial shared cognition is calculated by taking the sum of the items on which there was initial shared cognition (see Appendix B) divided by 47, the total number of items. By coincidence, the participants of some workshops had a much larger shared frame of reference to begin with. If the participants start out with a high extent of shared cognition, there is less room to construct a shared frame of reference *during* the workshops. In other words, it is the lack of initial *frame resonance* that is an important determinant of how actively individuals engage in framing practices (Kaplan, 2008, p. 740).

In order to advance our insights into how the construction of a shared frame of reference comes about, we perform a comparison across workshops (Bechky, 2011; Eisenhardt, 1989), resulting in a model of framing strategies. We use the workshops' initial shared cognition and their outcome in terms of the increase in shared cognition to decide which workshops are compared on differences and which on similarities. Half of the workshops are not surprising in terms of these two dimensions: they start with low shared cognition and the outcome is considerable increase in shared cognition, or they start with high shared cognition and the workshop shows no considerable increase in shared cognition, both according to expectations. However, four workshops do provide interesting results because the outcome and the initial shared cognition do not align. Workshop one and three show a considerable increase in shared cognition, even though the initial shared cognition was high. Workshop five and seven show no considerable increase in shared cognition, though the initial shared cognition was low. The subsequent analysis of framing strategies therefore consisted of searching for similarities between workshops one and three and similarities between workshops five and seven, and for differences between one and three on the one hand and five and seven on the other, with the remaining workshops as a baseline.

Below we use excerpts from the conversations in the eight workshops to illustrate the framing strategies used by managers to come to a shared understanding of the energy transition. We start with describing the key issues on which there proved to be a difference in interpretation initially. The forming of a shared frame of reference implies that there was a lack of it to begin with, so it is these key issues where strategies on creating a shared frame of reference can be found. These issues were identified by coding the transcripts of the eight workshops for differences in interpretations and picking out those issues that led to the most severe discussions between participants with opposing views.

One of the issues on which there proved to be a difference in interpretation was on the question whether the focus in the transition towards a more sustainable

energy system should be on the production of renewable energy or on energy conservation. Some argue that consumers may use as much energy as they want, as long as this energy is produced without the use of fossil fuels.

> *Participant seven in workshop four says: "… of course it's wonderful to have this legislation, that 100 Watt light bulbs are prohibited, that's great, but to be honest that is totally beside the point […] If you happen to have solar panels on your roof and hm, you want a 100 Watt light bulb, and you install an additional solar panel... I'm convinced that that is what it's all about, it's about the production of renewable energy." Participant thirteen of workshop five has a similar belief: "… my opinion is that as long as you have enough renewable energy, energy conservation does not have a role at all".*

Others take an opposite stand and say that energy conservation is much more important than clean production of energy.

> *Participant twelve of workshop five says: "I do not agree. It's just, well, common sense. If you consume less energy you're more sustainable".*

From the long discussions on this issue it shows that the participants maintain different frames on what it takes to enhance the sustainability of the energy system.

Another issue that led to ample discussion was the question of how to cope with intermittency: wind energy is only available when there is enough but not too much wind and solar energy is only available during the day. Participants showed disagreement on which of several alternative solutions should be sought.

> *In workshop one, participant eight states: "Well, if you want to use renewable sources like wind and the sun that are not under your control, you will have to store energy. The more production capacity there is, the more you will have to store during the peak hours." Participant two of the same workshops reacts: "Unless you use information technology to shift demand to those moments of abundant supply".*

Discussions on intermittency surfaced in almost all workshops. Other possible solutions that are mentioned during the workshops include a higher capacity of the electricity grid to balance demand and supply geographically, price incentives to influence demand, and using biofuels as an alternative during moments of low supply of wind energy and solar energy.

A third issue is about national policies that influence the transition towards a more sustainable energy system. Some argue that policies change too fast and that this hinders the transition. The reasoning is that the possibility of changes in policies introduces a strong degree of uncertainty and investments in sustainable energy are postponed in such a setting. Others stress that policies should be adapted to the most recent developments, and that therefore policies should change very often.

> *In workshop one, participant ten states: "Stability in energy policy [is important]". Participant seven answers with: "Rigidness in energy policy is undesirable as well, if circumstances change you should not hold on to the same policies".*

These examples show that indeed the strategy workshops provide a platform for discussing issues on which the participants hold different interpretations. The question that follows next, given that there is a difference in interpretation initially, is how a shared frame of reference is created. The transcripts were coded for the several ways in which a shared frame of reference was constructed. The excerpts were analyzed in several iterations and in each iteration related theories were consulted. During these iterations it became apparent that the literature on framing was particular helpful in understanding the process of constructing a shared frame of reference, since the coding scheme emerging from our data converged with the existing models of how framing comes about (Gioia and Chittipeddi, 1991; Kaplan, 2008; Rouleau, 2005; Nutt, 1998; Snow et al., 1986). Specifically, like Kaplan (2008), we used the framing model of Snow et al. (1986) and provide a refinement of their model in our results presented below. Snow et al. (1986) distinguish between *frame bridging*, *frame amplification*, *frame extension*, and *frame transformation* and we refine this model, but first we distinguish between *frame building* and *frame relating*.

Frame building

Managers build a frame by sketching what they deem as important cues in the environment, and what meaning they attach to these cues. They justify these frames using analogies or metaphors (Cornelissen et al., 2011), or by referring to another source of authority, as in the example below where a participant refers to his experience in the field as a source of legitimacy.

> *Participant three in workshop seven is stressing the importance of the concept of 'cost reduction' for the energy transition: "It is about having a higher cost reduction, because that would speed up the energy transition". Several other participants find it hard to understand what he means exactly by cost reduction. They ask several*

> *questions for clarification and attempt to formulate the concept in their own words to check whether they understand, which participant three concludes is not the case. Then, in another attempt to convince the others of the importance of the concept, he refers to his experience in the industry as a source of legitimacy: "It is about energy cost reduction. It's just…, yes…, it is the energy…, I'm from the field, and in the field it is like this: people look at 'I have a certain price tag A, and if I invest then I'll have a price tag B', and the bigger the delta, the faster one invests. In my view, the whole energy transition is being inhibited because this delta is too small".*

In this phase of frame building, *listening* plays at least as important a role as frame building, as frame building can only be successful if the other participants are receptive to the frame as it is being built. Active listening can be seen in the workshops through participants confirming and amplifying the frame that has just been built, or through asking questions for clarification or for a further concretization.

Frame relating

Frame building is done on the level of a single frame. As soon as the participants have enough information on a certain frame, they may start to make connections between frames, by using frame relating strategies. Strategies that appeared during the workshops are *translating*, *extending*, *dissecting*, *appealing*, and *merging*, which form a refinement of the framing model of Snow et al. (1986).

Translating is the strategy where participants use their own words to reformulate a frame as built by another participant. These statements for example start with "*I think you mean…*", "*you actually mean…*", or "*I would call this…*". The participant that built the original frame may respond by agreeing or disagreeing on the translated frame. The following excerpt is an example of translation:

> *Participant twelve in workshop four says: "Well, see, when it comes to the energy transition, you need legitimacy, that seems to me to be the most important issue, and… and legitimacy from citizens that ultimately do the voting and the investments, and that have an overview of the different options. You know, how they are able to apply their influence." Participant five reacts: "I totally get what you say, but I think you actually mean something different. Something a bit more, ehh, the… how are you able to know, that what you do, is actually contributing to the ultimate goal." Facilitator two in the same workshop continues: "Do you mean their understanding? The understanding that citizens have of the energy system?"*

Extending is the practice where participants use an existing frame as a starting point to build their own frame.

> *In workshop four several participants try to describe how the energy transition is influenced by historical developments. Participant five: "I'm not sure whether it's really about the residual value, well ehh…, I think it is not just the residual value of the infrastructure". Participant ten reacts by extending the frame: "It is also the vested…, yes it's very broad, it's the vested interest, but also what you're used to, routines, it's related to a lot of different things…".*

Dissecting is the practice where participants notice that what has been presented as a single frame, in their view consists of multiple frames. In other words, dissecting is about debunking assumed shared cognitions. Where participants had the impression that they shared the same frame, someone observes that this is actually not the case. The following excerpt is an example of dissecting.

> *Participant four in workshop three says: "If you look at the whole chain, it has a beginning and an end, so, the higher the yield at one end of the chain the lower the yield on the other end." Participant one reacts: "Well, look, it's about the distribution of the yield, the total yield in the whole chain, from well to wheel. There are margins and, well they should take care that these margins are distributed in such a way that there are no parties that have no interest in bringing about an energy transition". Participant seven then notes that there are multiple frames: "You're making a different point […] You are also talking about the parties that form a hindrance […] [He] is saying two things. I think you're saying something about the financial aspects, hence about the business case, but at the same time you're talking about hindrances in such a form of collaboration. Those are two things".*

Appealing is the practice where a participant explicitly asks the other participants to help finding the right interpretation for a certain cue.

> *In workshop one, when asked for important aspects of the energy transition, participant three (a manager in a water utility) says: "Yes, I'll try to describe it but I do not have a good word for it and perhaps you will. […] The thing I'm thinking of, ehh, the depreciation period, or the durability of infrastructures, or cars. The longer a certain type of car lasts, the longer it takes before someone buys a new one, the longer it takes before he switches from a combustion engine to an electric powered vehicle. And for infrastructures, very simple, I just simply think about my*

> *water systems. I put waterworks in the ground for eighty years, as a company. And if I want to do something else with those waterworks, I want to extract warmth or I want to use them for cooling, a form of sustainable energy usage, I prefer to do that the moment they are depreciated and need to be replaced. But if I depreciate them in eighty years, I would be waiting very long for that to happen. So, this lifetime, this depreciation period of assets…, if you could just shorten that…".*

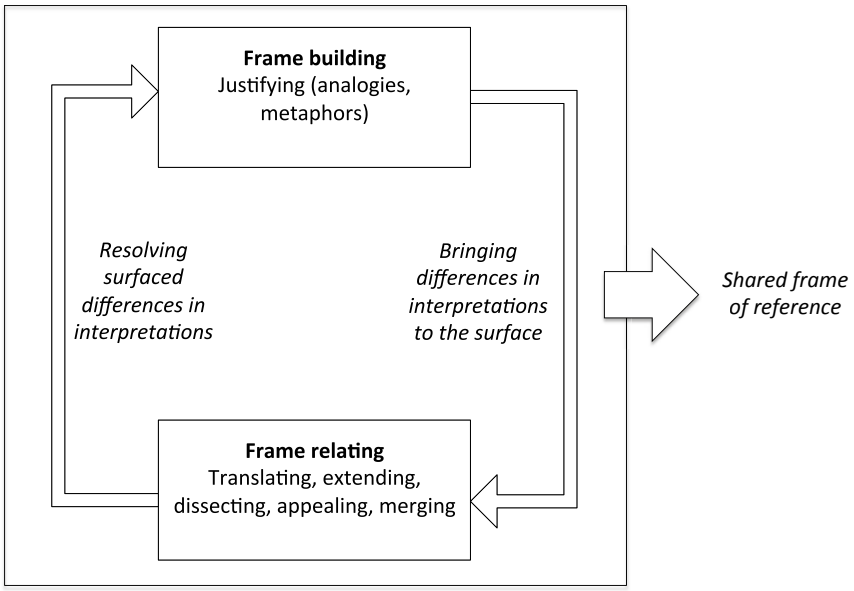
Merging is the practice where frames that up to that point were seen as separate entities are identified as being two descriptions of the same frame. Merging is the opposite of dissecting, discussed above. The following excerpt is an example of merging.

> *Participant five in workshop four says: "The interdependencies, you know the government depends on the industry, the industry, well ehh, depends on the rest of the world […] If one party intervenes, this has an effect on the others, and this results in no one doing any interventions". Another participant notes: "That's closely related to the inertia of the existing structures [we discussed earlier], isn't it?"*

Frame building and frame relating are interdependent. Frame relating can only take place after sufficient time has been devoted to building frames. Besides, frame relating may inspire subsequent building of frames. Therefore, our model of framing strategies in Figure 4.1 below shows the two sets of framing strategies with arrows between the two sets in both directions, stressing their interdependencies. Together, frame relating and frame building result in the construction of a shared frame of reference.

The model in Figure 4.1 provides an answer to the question how the creation of a shared frame of reference in inter-organizational workshops comes about. Participants take turns in justifying what they see as important cues in the environment. In a collective effort, the different frames are then contrasted and contested, and ultimately resolved through translating, extending, dissecting, appealing, and merging.

Figure 4.1: Framing strategies in inter-organizational strategy workshops



The eight workshops showed different patterns in terms of the framing strategies that were used. One notable difference is the balance between frame building and frame relating. Workshops five and seven were characterized by relatively more frame building and less frame relating when compared to workshops one and three. Participants spent much time on describing their interpretations of the energy transitions, and less on linking the different interpretations that came up during the discussion. Also, these workshops show more failed attempts of linking interpretations, for example by participants using *translating* to link two interpretations, with the participant building the original frame stating that the suggested translation is not accurate. Related to the skewed proportion of frame building and frame relating, workshops five and seven have fewer differences in interpretations. This is reflected in the absence of an increase in shared cognition, since it is the resolving of differences in interpretations that ultimately leads to the construction of a shared frame of reference. Workshops one and three on the other hand have relatively more of the framing strategies *dissecting* and *appealing*. Dissecting adds nuance to the surfaced frames as the discussion evolves by identifying the conditions under which a certain interpretation holds. Appealing shows that participants are open to renewing their frame, as they explicitly ask the other participants to help them to improve a certain interpretation of the energy transition.

4.5 Discussion

To what extent do inter-organizational strategy workshops succeed in constructing a shared frame of reference, and how does this come about? Our findings show that the workshops in our study were successful to varying extents, associated with the framing strategies that were adopted in the workshops. Constructing a shared frame of reference appears to require a delicate balance. On the one hand, when the group is not diverse enough, participants are already like minded and the workshop will not reach the goal of constructing a shared frame of reference. On the other hand, if the participants spend too much time on building their own frames compared to relating the frames, differences in interpretations do not surface, again resulting in the workshop not reaching the goal of constructing a shared frame of reference. Resolving differences in interpretations requires a balance of frame building and frame relating. Differences in interpretations are only surfaced after participants have spent time on legitimizing their interpretations, and others have been listening to these interpretations being legitimized. Moreover, surfaced differences in interpretations are only resolved if the participants succeed in relating two or more frames.

By comparing the framing strategies across workshops, we contribute to the strategy-as-practice literature by connecting what strategists do to create the workshops' outcome (Jarzabkowski, 2005; Jarzabkowski and Spee, 2009; Whittington, 1996). Research on strategy workshops showed mixed results (Bowman, 1995; Healy et al, 2013; Hodgkinson et al., 2006; Jarzabkowski and Seidl, 2008; Johnson et al., 2010) and our findings show how the success of a workshop depends on the skillful interaction of its participants, acting as "signifying agents actively engaged in the production and maintenance of meaning" (Benford and Snow, 2000, p. 613). Our focus on frames made the strategy process appear, instead of a process of gathering and processing information, as an interpretative process, thereby stressing *interpretations* as the substance of strategy workshops (Islam, 2015). As such, our findings stress the role of workshops as a forum for aligning frames through dialogue rather than following a seemingly rational sequence of steps resulting in a single strategic decision (Hodgkinson et al., 2006, p. 489).

4.5.1 Bridging the cognitive gap

The open strategy phenomenon is puzzling. Traditionally strategy is seen as exclusive and secret (Whittington et al., 2011). Textbooks on strategy typically come with a picture of chess pieces on the cover. Similar to chess, strategy is traditionally seen as about thinking a couple of steps ahead and predicting the next move of the

competition. From this point of view, it makes absolutely no sense to be open about what your next move is going to be. We contribute to the emerging literature on open strategy by providing a cognitive explanation why it is understandable that more and more organizations increase the openness of their strategy. Open strategy in the form of inter-organizational strategy workshops can be understood as an occasion for collective sensemaking. As such, these workshops are employed to help overcome peripheral blindness, through increasing cognitive diversity (Prahalad, 2004), and through "surfacing and resolving differences across actors" (Jarzabkowski and Kaplan, 2015, p. 548). Especially in turbulent environments, different stakeholders have different interpretations of trends in the environment. Interpretations in the form of simplified understandings of the environment have a strong influence on the strategy process (Daft and Weick, 1984). Because frames in organizations converge over time, organizations suffer from what has been called peripheral blindness (Day and Schoemaker, 2004; Grant, 2003; Pina e Cunha and Chia, 2007; Prahalad, 2004). Increasing the openness of the strategy process is valuable for an organization because it helps overcoming peripheral blindness (Barr et al., 1992; Tripsas and Gavetti, 2000). Open strategy creates opportunities for resolving differences in interpretations before they result in a high profile controversy (Amason, 1996; De Wit et al, 2012). The evidence in our case study showed that such workshops indeed lead to a shared frame of reference between internal and external stakeholders. An organization's biased perception of its environment can lead to unanticipated resistance as could be seen in the case of the Dutch smart meter rollout (Hoenkamp et al., 2011). By resolving differences in interpretations in an early stage, organizations prevent having to deal with resistance after strategic decisions have been implemented and turning back those decisions would come at great costs. In this way open strategy brings stakeholder engagement to the forefront of the strategy process, improving an organization's capacity to create stakeholder value (Freeman, 1984; Hart and Sharma, 2004; Laplume et al., 2008; Parmar et al., 2010). Our findings resonate with earlier studies that stressed cognitive diversity. This diversity has been shown to help teams in organizations overcome peripheral blindness (Pina e Cunha and Chia, 2007). We take this argument one step further by stressing the need to include external stakeholders in strategy workshops, in order to increase cognitive diversity even more. After all, it is these external stakeholders that an organization aims to create value for (Freeman, 1984; Parmar et al., 2010). Being appreciative of external stakeholders' perceptions of reality is a necessary condition for creating stakeholder value.

4.5.2 Framing strategies

We analyzed inter-organizational strategy workshops and during the process of open coding it became apparent that the literature on framing was particular helpful in understanding the process of constructing a shared frame of reference, since the coding scheme emerging from our data converged with the existing models of how framing comes about (Gioia and Chittipeddi, 1991; Kaplan, 2008; Rouleau, 2005; Nutt, 1998; Snow et al., 1986). More specifically, our framing model is a refinement of the model presented by Snow et al. developed in the context of social movements (1986). Our refinement of earlier framing models provides a contribution to the cognition literature (Benford and Snow, 2000; Cornelissen and Werner, 2014; Gioia and Chittipeddi, 1991; Kaplan, 2008; Snow et al., 1986; Weick, 1995). Snow et al. (1986) distinguish between four types of frame alignment: frame bridging, amplification, frame extension, and frame transformation. On the same level of abstraction, what we call *frame relating*, we distinguished between *translating*, *extending*, *dissecting*, *appealing*, and *merging*. Similar to Kaplan (2008), we distinguish between what we call frame building (establishing legitimacy in Kaplan's (2008) terms), and frame relating (realign frames in Kaplan (2008)'s terms and frame alignment in Snow et al,'s (1986) terms).

Our model differs from earlier models and this is directly related to an important characteristic of open strategy: inclusion. Earlier studies, including Snow et al. (1986) were carried out in a context where there is a clear hierarchical relation between the ones selling a frame, and the recipients on the other side. In the study of Snow et al. (1986), there is a distinction between the organization that tries to mobilize a frame, and the relatively passive recipients of the framing strategies that either choose to join the movement or not. Frame alignment then is about the sending organization trying to adjust their frame in order to close the gap between the frame of the organization and the frame of the recipients on the other side. Another example is the study on sensemaking and sensegiving in strategic change initiation (Gioia and Chittipeddi, 1991). In this study, the context is a situation where senior managers have opted for a certain strategic change, and framing strategies are applied to facilitate a smooth implementation of the decision ex post by lower levels of management in the organization. This context is similar to that of Rouleau (2005), which also studies sensegiving as an instrument to sell change. Nutt (1998) analyses the framing of decisions in a similar fashion, with frames as instruments that facilitate the justification of a decision after it was made. Open strategy as in our case of inter-organizational workshops shows what managers do after they concluded that frames apparently collided, it shows how they resolve such a collision. Sensemaking in open strategy as such is closer to what Wright et al. call 'resourceful sensemaking': "the ability to

appreciate the perspectives of others and use this understanding to enact horizon-expanding discourse" (Wright et al., 2000, p. 807). The context of open strategy, instead of being a one-way type of communication, then is much closer to what other scholars have referred to as stakeholder engagement (Freeman, 1984, Parmar et al., 2010). Indeed, open strategy brings stakeholder engagement to the forefront of the strategy process.

Kaplan (2008) uses the framing strategies from Snow et al., (1986) as a lens to study framing contest within a single organization. In this study, the framing strategies serve as a strong link between cognition on the one hand, and politics on the other. The inter-organizational workshops we studied seem to have a much smaller political component and this is reflected in the framing strategies encountered. The practice of *appealing* in the workshops is typical for this difference: participants of the workshops explicitly indicate that they want the other participants to help interpreting a certain cue they describe. This supports the idea that at least some of the participants did not only come to convince others of their own frame, without being open to being convinced by others. Indeed, building a shared frame of reference would not be very successful if this were to be otherwise.

4.5.3 Limitations

In our study we used closed questionnaires to measure the frames of strategy workshop participants. We analyzed newspaper articles to identify the items that together form such a frame. Measuring frames is inherently difficult because of their idiosyncratic nature (Daniels et al., 2002). Therefore, "the most fundamental challenge to researchers assessing a knowledge structure is to be certain they are measuring the subject's knowledge structure and not their own" (Walsh, 1995: 308). Another difficulty in measuring frames is the 'mental model uncertainty principle' (Richardson et al., 1994: 191). As soon as one elicits a mental model, this mental model might change because of this elicitation alone. Any method of elicitation runs the risk of distorting the very construct that it tries to measure. To cope with these difficulties of measuring mental models and to be able to assess changes we carried out a study on the content of the mental models on the energy transition from a different source: we took stock of this content by studying newspaper articles that mention the energy transition.

Although our surveys may have influenced the frames of the participants, we expect this influence to be small since the participants in our study possess expertise that surpasses the level of general knowledge contained in newspapers, since they are all involved in the energy transition in one way or the other. Besides, we do not expect

that this bias influences the results of our analysis: we only look at the increase of shared cognition, not at absolute scores of shared cognition. Shared cognition may be influenced by simply mentioning issues that could be considered important or not in the survey, but by only looking at the *differences* between the answers right after the workshops and the answers right before the workshops, using the same survey, this bias drops out of the equation.

Chapter 4 explored the potential of strategy workshops for improving an organization's position to simultaneously satisfy the interests of multiple stakeholders. It was shown that such workshops provide an occasion for collective sensemaking, allowing for the construction of a shared frame of reference. By surfacing and resolving cognitive conflicts between internal and external stakeholders before strategic decisions have been made, controversial decisions may be avoided.

Chapter 4 described the process of constructing a shared frame of reference between internal and external stakeholders. The participants of the workshops discussed the issue of the Dutch energy transition and the results of their discussion have implications for the Dutch energy industry. Therefore, the next chapter will describe the shared frame of reference that resulted from the workshops, how it compares to earlier studies of the Dutch energy industry, as well as its implications.

Chapter 5

Putting the findings to use: policy implications for the Dutch energy transition*

While chapter four analyzed how eight group model building sessions facilitated constructing a shared frame of reference, this chapter delves into the content of the workshops by showing what the resulting shared interpretation of the Dutch energy transition looks like. Especially problematic in the Dutch energy transition is the tendency of decisions to have little impact on the system as a whole, a phenomenon that has been called policy resistance. The workshops can be seen as a coordinated effort to overcome policy resistance in the Dutch energy transition. The resulting model has implications both for Alliander and its external stakeholders, which are discussed in this chapter in addition to the added value that the group model building workshops had to other dominant approaches that have been used to analyze transitions.

* An earlier version of this chapter was presented as De Gooyert, Rouwette, Van Kranenburg, Freeman, and Van Breen, *Energy transition dynamics, understanding policy resistance in the Dutch energy system*, at the 32nd Internal Conference of the System Dynamics Society, Delft, The Netherlands, 2014.

5.1 Introduction

A considerable number of studies have been published on *sustainability transitions* (e.g. Elzen and Wieczorek, 2005; Lachman, 2013; Markard et al., 2012; Van den Bergh et al., 2011). These studies argue that the challenges today's societies face are unprecedented, and that fundamental transformation processes, or transitions, are necessary in order to meet them (Van den Bergh et al., 2011). Examples of such challenges are water and food scarcity, environmental pollution, and climate change (Markard et al., 2012). Sustainability transition studies aim to understand how transitions evolve over time, and often generate explicit policy recommendations to support progressing transitions. The multi-level perspective (MLP) and transition management (TM) are two dominant approaches that are being used to study sustainability transitions (Lachman, 2013; Markard et al., 2012; Van den Bergh et al., 2011). MLP understands sustainability transitions as a coevolution of niches, regimes, and landscapes (Lachman, 2013). Niches are conceptualized as small spaces where innovations in technologies and markets occur (Geels, 2007), while regimes are the broader context in which niches find themselves, consisting of (groups of) actors, their rules and norms, as well as material and technological elements (Geels, 2004). Landscapes represent the even broader trends and global events that provide the context in which regimes are embedded (Lachman, 2013). TM is a governance concept specifically developed for the management of sustainability transitions (Loorbach, 2010). TM is characterized by a focus on long term thinking, with appreciation for multiple domains, actors, and levels (Rotmans et al., 2001, p.22). It has a focus on learning, on system innovation alongside system improvement, and on keeping a large number of options open (Rotmans et al., 2001, p. 22).

Policies that have been developed with the use of MLP and TM are meeting considerable *policy resistance* in practice: "Given recent drawbacks in actual policy contexts (Kern and Smith, 2008; Kern and Howlett, 2009), the role of transition management […] remains to be seen" (Markard et al., 2012). In the Netherlands for example, transition thinking has been the foundation for energy policies for nearly a decade, but results have not been able to meet expectations (Kern and Smith, 2008; Van Rooijen and Van Wees, 2006; Verbong and Geels, 2007). Policy resistance is the phenomenon that systems tend to defeat the policies that have been designed to improve them (Sterman, 1994), that "some problems persist in spite of continuous efforts to solve them" (Meadows, 1982, p. 103). The observation that policies brought forward by MLP and TM encounter policy resistance motivates our research questions: Why is policy resistance in the context of sustainability transitions such

persistent, and which types of policies may be identified that help overcome policy resistance? Answering these questions allows us to enhance the transition literature, by putting it in a better position to understand and overcome policy resistance.

Policy resistance results from feedback loops pushing systems back towards their initial condition. An approach that explicitly addresses policy resistance and the underlying feedback loops is system dynamics (Dangerman and Schellnhuber, 2013; Forrester, 1961; Richardson, 1991; Senge, 1990; Sterman, 2000; Vennix, 1996). System dynamics (SD) claims to be an approach that supports understanding and overcoming policy resistance, therefore we look in this direction for the answers to our research questions. While applications of SD on transitions are numerous (Dangerman and Schellnhuber, 2013; Fiddaman, 2002; Ford, 1997; Forrester, 1971b; Meadows et al., 1972; Moxnes, 1990; Naill, 1992; Sterman, 1982), surprisingly, a strong connection with the sustainability transition literature has yet to be established. All approaches have their blind spots (Coenen and Díaz López, 2010), so rather than proposing to use SD instead of MLP or TM, the current study aims to identify how SD complements MLP and TM. As a result, we set out to expand the 'toolbox' of sustainability transition scholars and policy makers with the system dynamics approach, putting us in a better position to cope with policy resistance.

To answer our research questions, we conduct a case study in the context of the Dutch energy transition because this is a typical example where policies developed with MLP and TM have been meeting policy resistance (Kern and Smith, 2008; Van Rooijen and Van Wees, 2006; Verbong and Geels, 2007). Our case study consists of eight workshops, in which a total of 96 experts from that industry applied SD to explain policy resistance in the Dutch energy system. Using the case study as an illustration, we find that SD complements the dominant approaches by providing a middle ground between emphasizing agency or structure. Moreover, we will show that the approach helps to overcome policy resistance by mapping out the structure of the system responsible for policy resistance, thereby enabling policy makers to identify high leverage points that support sustainability transitions.

The remainder of this chapter starts with a background on the phenomenon of policy resistance. Subsequently, we present the case study where we apply the system dynamics approach on the Dutch energy transition. This illustration includes a section discussing the background of the Dutch energy transition, a section on the methods that have been applied, a section discussing the model that resulted from the case study, and a section providing an analysis of this case, including policy

recommendations that aim to overcome policy resistance. After describing our case study, we return to the more general level of sustainability transition approaches by comparing system dynamics to the multi-level perspective and the transition management approach, and by discussing limitations.

5.2 Policy resistance

Policy resistance is the failure of policies to achieve the desired outcome (Forrester, 1971a; Ghaffarzadegan et al., 2011; Meadows, 1982; Sterman, 1994). Numerous studies have focused on the inertia of the policy process: legal and political constrains often force public administrators to make only incremental adjustments to existing policies (Lindblom, 1959; Forrester, 1984). However, even if public administrators do manage to overcome such inertia in the policy process, the identified policies may fail to deliver on its promise. It is "the tendency for interventions to be delayed, diluted, or defeated by the response of the system to the intervention itself" (Meadows, 1982, in Sterman, 1994, p. 303). Moreover, "many times our best efforts to solve a problem actually make it worse" (Sterman, 2000, p. 3). Already in the 1970s, scholars were discussing the "unexpected, ineffective, or detrimental results often generated by government programs" (Forrester, 1971a, p. 109). Policy resistance occurs when "policy actions trigger feedback from the environment that undermines the policy and at times even exacerbates the original problem" (Ghaffarzadegan et al., 2011, p. 24). Society consists of all kinds of actors, each with their own goals. "Suppose a government intervenes in such a system with a strong policy that actually moves the state of the system toward the government's goal. That will open up greater discrepancies for other actors with different goals, which will cause them to redouble their efforts" (Meadows, 1982, p. 104).

The sustainability transition literature is full of references to policy resistance, although not by that name. In its overview of different transition approaches, Lachman stresses that transitions, although necessary, may be very hard to bring about due to the fact that "society is often "locked-in" by […] unsustainable systems of consumption and production" (Unruh, 2000, 2002, in Lachman, 2013, p. 269). Yet another term, in the same overview, is that of "persistent problems": those problems that are "inherent in system structures" (Lachman, 2013, p. 270). In their description of what they call the sustainability transitions field, Markard et al. (2012) explain that sustainability challenges are "aggravated by the strong path-dependencies and lock-ins we observe in the existing sectors" (Åhman and Nilsson, 2008; IEA, 2011; Safarzynska and Van den Bergh, 210; Unruh, 2000, in Markard et al., 2012, p. 955).

Van den Bergh mentions the "fundamental barriers" (Van den Bergh et al., 2011, p. 2) that often plague sustainability transitions, yet another indication of the persistence of policy resistance in this field.

Although policy resistance is widely acknowledged in the sustainability transition literature, studies often touch the subject tangentially when setting the stage and studies focusing primarily on this phenomenon are rare. Perhaps related is the observation that policies based on those approaches suffer from policy resistance themselves (Kern and Smith, 2008; Van Rooijen and Van Wees, 2006; Verbong and Geels, 2007), which can be seen as a suggestion that dominant transition approaches are not adequately suited to deal with policy resistance. To be able to both understand policy resistance and identify remediating policies, we turn to an approach that explicitly claims to be suitable to this end: the system dynamics approach (Forrester, 1961; Richardson, 1991; Senge, 1990; Sterman, 2000; Vennix, 1996). According to the founder of this field, Jay W. Forrester (1971a, p. 109), "society becomes frustrated as repeated attacks on deficiencies in social systems lead only to worse symptoms", and "the field of system dynamics now can explain how such contrary results happen". Moreover, applying the system dynamics approach "will lead to a better understanding of social systems and thereby to more effective policies for guiding the future" (Forrester, 1971a, p. 109). System dynamics supports a better understanding of complex systems by identifying the causal relations between both physical and behavioral components that together provide an explanation for the behavior of the system as a whole (Forrester, 1961). The starting point is that closed circles of causal relations, called feedback loops, are the main determinants of system behavior and as such provide the strongest leverage points for interventions (Richardson, 1991; Senge, 1990). These feedback loops come in two forms. *Balancing* feedback loops give a system the tendency to come back to the position that it started from. Policy resistance then, can be understood as the failure to take balancing feedback loops affecting a certain goal variable into account (Ghaffarzadegan et al., 2011, p. 24). Identifying these balancing feedback loops helps to understand why systems have the tendency to delay, dilute, or defeat interventions. *Reinforcing* feedback loops on the other hand, explain why some systems have the tendency to amplify any intervention inflicted on them. Even a small change in one of the variables within such a loop could have drastic results.

An example of a balancing feedback loop that is well known in the energy literature is the *rebound* effect (Antal and Van den Bergh, 2014; Herring and Sorrell, 2008). The rebound effect entails that investments in energy conservation often come with side effects that offset the original saving (Antal and Van den Bergh, 2014, p. 587). An example is a family that buys a car with higher fuel efficiency, potentially saving

energy because the car requires less gallons of fuel to travel the same distance as before. Because they are saving on fuel the family may be tempted to increase the distance they travel, thereby pushing the system back toward the point it came from.

An example of a reinforcing feedback loop that is well known in the energy literature is the *learning effect* (Bergek and Onufrey, 2013). An investment in a certain technology may lead to improvements in that technology because of the additional experience that is gained through the investments. The investment thereby increases the attractiveness to invest even more into that same technology, compared with competing technologies that did not benefit from the former investment. This effect has also been described under the labels of path dependency (Bergek and Onufrey, 2013) and the 'success to the successful' system archetype (Senge, 1990).

A sustainability transition can be understood as a complex system consisting of several feedback loops. With this understanding, successfully managing a sustainability transition becomes a matter of identifying high leverage points in those feedback loops that can support the progression of the transition, thereby overcoming policy resistance. System dynamics supports the identification of high leverage points by creating "maps of the feedback structure" (Sterman, 1994, p. 192), or causal loop diagrams. Below we present an illustration hereof, by applying the system dynamics approach on the Dutch energy transition, a case of policy resistance. But first we provide some more background on the Dutch energy transition.

5.3 The case of the Dutch energy transition

At present, more than 85% of the Dutch energy consumption is covered by oil and natural gas (primary energy consumption in 2012, BP, 2013). The Port of Rotterdam, the largest port in Europe, provides the Netherlands with easy access to oil. What distinguishes the Netherlands the most from other European countries however, is its reliance on natural gas. This stems from the fact that the Netherlands has a large reserve of natural gas in the province of Groningen (with a proven reserve of 1.0 trillion cubic meters at the end of 2012, BP, 2013). In cooperation with private parties, the Dutch government has been extracting natural gas for several decades (Verbong and Geels, 2007).

Since the energy crisis in the early 1970s, the Dutch government has been developing energy policies that include increasing the energy system's sustainability (Van Rooijen and Van Wees, 2006). Over time, a range of policies has been implemented but the effectiveness of these policies remains limited: a large gap between goal and current situation remains. Policies aimed at increasing the share of

renewable electricity for example ranged consecutively from voluntary agreements, to the promotion of demand, and finally to the promotion of supply (Van Rooijen and Van Wees, 2006). By frequently changing policies, the government has not been able to reduce market uncertainties and to instill confidence in market parties (Van Rooijen and Van Wees, 2006). While sustainability became more and more prominent in policy rhetoric, the changes that did occur in the Dutch energy system were mainly driven by broader trends such as Europeanization and liberalization, with environmental aspects remaining in the periphery (Verbong and Geels, 2007).

Since the early 2000s the Dutch policies are explicitly aimed at bringing about an energy transition using the transition management approach, including the appointment in 2001 of a 'transition manager' who is responsible for managing the 'energy transition project', and the appointment in 2005 of a 'task force energy transition' with 17 members from both private and public parties (Kern and Smith, 2008). The taskforce and its transition management however, had no substantial impact on the energy policy (Kern and Smith, 2008). While the transition efforts were explicitly aimed at incorporating various organizations in identifying policies, the partnerships soon became dominated by elites from the government and the fossil industry (Hendriks, 2008). The 'transition storyline' referred to 'niche innovations' that lead to 'system changes', but as incumbents captured the governance of the transition, the potential for change diminished (Smith and Kern, 2009). Established players played too great a role, standing in the way of effective transition management (Kemp et al., 2007).

The most recent energy policies were issued in 2013. Following a request from the Dutch government, the Dutch Social and Economic Council (SER) facilitated a process in which a wide variety of parties arrived at an agreement on how to meet the national objectives. One of these objectives is the goal of 16% renewable energy production by 2023 (SER, 2013), compared to a current share of 4.7% (PBL, 2012). A total of 40 organizations signed the so-called 'Energy Agreement' that was the result of this process, including "central, regional and local government, employers and unions, nature conservation and environmental organizations, and other civil-society organizations and financial institutions" (SER, 2013, p.1).

5.4 Method

To provide an illustration of how policy resistance may be explained and policies may be identified with the system dynamics approach, we apply the approach on the Dutch energy transition (Forrester, 1961; Sterman, 2000). Involving a wide variety of

stakeholders with various viewpoints in constructing a system dynamics model helps to develop a robust model of the energy transition (Vennix, 1996). To ensure such a robust model, we organized several workshops according to the format as put forward in group model building literature (Andersen and Richardson, 1997; Rouwette et al., 2002; Vennix 1996; 1999). Group model building is specifically suited for workshops where a variety of stakeholders is involved to collaboratively structure a problem (Rouwette et al., 2011).

A model building process consists of stakeholders participating in workshops in which they construct a representation of that part of reality that is relevant for a certain issue (Franco and Montibeller, 2010), in our case the Dutch energy transition. The model is built step by step and to ensure that the model accurately captures the viewpoints of the participants, after each step the question is asked whether all participants agree with the extension of the model. In our study, the model takes the form of a causal loop diagram: a diagram showing the relevant variables and the causal relations that link them (Vennix, 1996).

To ensure that there was enough room for interaction we aimed to keep the number of participants in each workshop low. It is the interaction that facilitates the exchange of arguments and the building of the model. On the other hand, we wanted to incorporate a wide diversity of viewpoints, which is served by including more participants. Therefore, we chose to organize eight separate workshops that are exactly the same in their design, except for the stakeholders that participated. The workshops resulted in eight separate models of the Dutch energy transition. Identifying the similarities between these eight models enabled us to aggregate them in a single robust model, which we present in the results section below. Excerpts from the eight workshops that supported the aggregation into one model are provided in Appendix D.

We invited stakeholders in collaboration with the Dutch Distribution System Operator Alliander N.V., which was introduced in chapter 1 (see pages 13-14 of this dissertation). Alliander co-organized the workshops. Various employees of Alliander helped by pointing out relevant stakeholders in their networks. The starting point for these invitations was the desire to include the widest variety of viewpoints possible. We invited a total of 329 experts from the energy sector. The number of participants per workshop varied from eight to fifteen, with a total of 96 participants over all eight workshops. Participants represented different stakeholder groups: 27 represented infrastructure (transmission, distribution), 25 services (consultants, bankers, lawyers), 18 industry (manufacturing, energy supply), 17 government (national, local), and 9 other (research, NGOs). Preparing the workshops and inviting the stakeholders started in June of 2013. The workshops took about five hours each and

took place in September and October of 2013. Each workshop was led by two facilitators that were familiar with the group model building method.

5.5 Case results

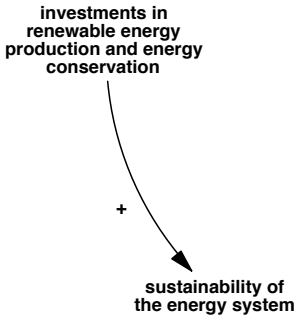
In eight workshops, stakeholders with a wide variety of viewpoints engaged in a dialogue on the Dutch energy transition. In each workshop the following question was guiding: "How can we explain the current development of the Dutch energy transition?" There were several lines of thought that came back in all the separate workshops. We describe these shared lines of thought below, representing those mechanisms on which there was consensus between the groups. We support the description with a causal loop diagram that we built up step by step. This diagram is a summary of the eight causal loop diagrams that were constructed in the workshops: elements that recurred in each of the different workshops were included in the summarizing diagram and elements that were mentioned in just some but not all of the workshops were left out (see Appendix D).

The causal loop diagram may be read as follows. If variables A and B are connected by an arrow with a plus sign, this means: if variable A increases variable B increases as well, and if variable A decreases variable B decreases as well. If two variables are connected by an arrow with a minus sign this means: if variable A increases variable B decreases, and if variable A decreases variable B increases. A closed loop of causal links is called a 'feedback loop'. These loops are characterized by the fact that each variable, via a chain of causal relations, influences itself. As mentioned earlier on in this chapter, we distinguish between two types of feedback loops: reinforcing feedback loops indicated by a snowball symbol and balancing feedback loops indicated by a balance symbol. For each variable in a reinforcing feedback loop it holds: if variable A increases this leads via a chain of causal relations to a further increase of variable A. Alternatively, if variable A decreases this leads via a chain of causal relations to a further decrease of variable A. For each variable in a balancing feedback loop it holds: if variable A increases this leads via a chain of causal relations to a decrease of variable A. Alternatively if variable A decreases this leads via a chain of causal relations to an increase of variable A.

The energy transition is a transition towards a more sustainable energy system. An energy system can be seen to consist of two parts: the part of energy *demand*, and the part of energy *supply*. On both sides the sustainability of an energy system may be improved. The demand side consists of energy consumption by for example households, industry, and transportation. Sustainability on the demand side may be

improved by energy conservation. Energy conservation may consist of decreasing the consumption of energy, or increasing the efficiency of energy consumption (decreasing the units of energy consumed per unit of output). The supply side of energy consists of the various ways of energy production, for example by combustion engines, central electricity plants and decentralized electricity production. Sustainability on the supply side may be improved by increasing the share of renewable energy production, for example by installing wind mills, solar panels, and so on. In terms of our model we represent this as follows: investments in renewable energy production and energy conservation lead to a higher sustainability of the energy system, see Figure 5.1.

Figure 5.1: Renewable energy production and energy conservation increase sustainability

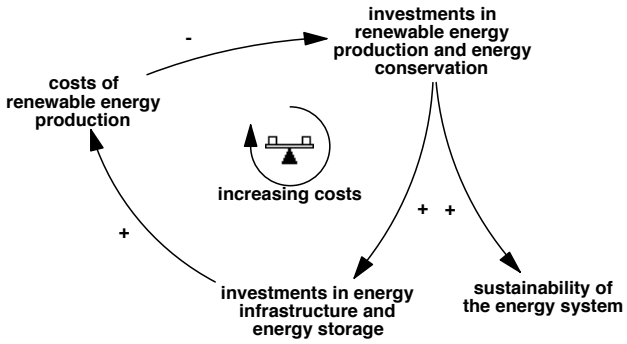


When substantial investments are made in renewable energy production and energy conservation this leads to side effects. An important side effect that was mentioned in the workshops is the intermittency that comes as a consequence of a higher share of renewable energy production. Windmills and solar panels for example only produce energy when the circumstances are right (enough wind but not too much, enough solar radiation). This intermittency has as a consequence that the demand and supply of energy are less aligned compared to fossil energy. To ensure the reliability of the energy system despite this intermittency, considerable investments are necessary. Investments in energy infrastructures may help to counteract the regional discrepancy between demand and supply, by transporting energy over larger distances. By transporting energy, local shortages and surpluses can be balanced. Besides,

investments in energy storage may help to counteract the temporal discrepancy between demand and supply, by forming a buffer. Investments in the advanced use of information technology could support balancing demand and supply, often referred to as 'smart grids'.

Investments in renewable energy production lead to intermittency and to counter this, additional investments are necessary. These additional investments add to the total costs of renewable energy production. These higher costs have as a consequence that the attractiveness of new investments decreases. The costly side effects of renewable energy production in this way create a balancing feedback loop, as is shown in Figure 5.2.

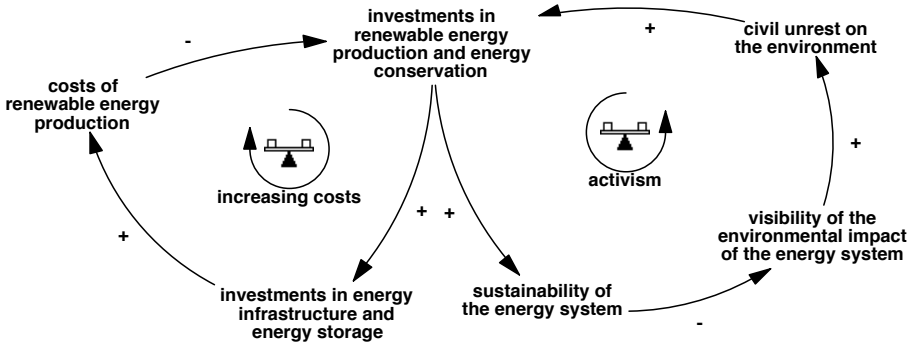
Figure 5.2: Investments in renewable energy production have costly side effects



The lower the sustainability of the energy system, the higher the chance that this leads to negative publicity. Examples are oil disasters or the environmental impact of shale gas that receives attention from environmental action groups and newspapers. This publicity leads to more visibility of the environmental impact of the energy system. This increased visibility fuels civil unrest on environmental impact. This unrest consequently can incite investments in renewable energy production and energy conservation.

Because investments in renewable energy production and energy conservation increase the sustainability of the energy system, the causal chain via visibility of the impact and civil unrest has a balancing effect, see Figure 5.3.

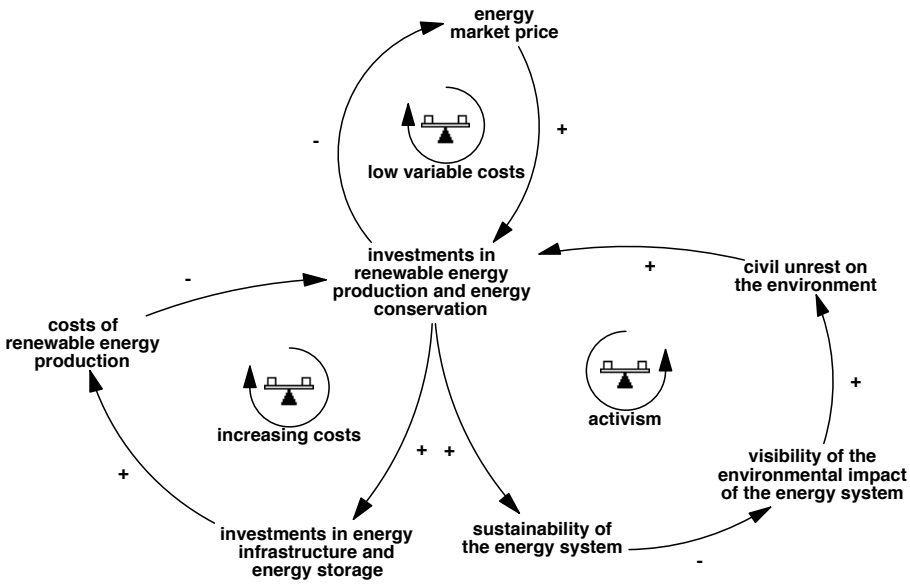
Figure 5.3: Unrest over environmental impact incites investments in sustainability



The cost structure of renewable energy production differs from fossil energy production. What characterizes for example windmills and solar panels are the high initial costs (purchase and installment), and the low variable costs. Maintenance costs will continue to occur but the wind and solar radiation that are converted into energy are free. Fossil energy production like coal and gas plants have much higher variable costs, as the plants have to buy fuel for as long as they produce energy. When capacity for renewable energy production is installed, this has a decreasing effect on the market price of energy. When windmills and solar panels are installed, they increase the availability of energy on the market, causing a decrease of the market price of energy. During the workshops several participants brought up the cases of Denmark and Germany, where the energy market price has occasionally been negative, due to the fact that on those moments supply was considerable larger than demand, and the possibilities of energy storage are still limited.

A high energy market price is an incentive for energy consumers to decrease their dependency on energy from the market. By investing in their own renewable energy production and in energy conservation, consumers reduce their need to buy energy from the market. The lower market price counteracts this incentive. Therefore, the feedback loop along energy market price has a balancing effect, see Figure 5.4.

Figure 5.4: A lower energy market price decreases the incentive for investments in sustainability

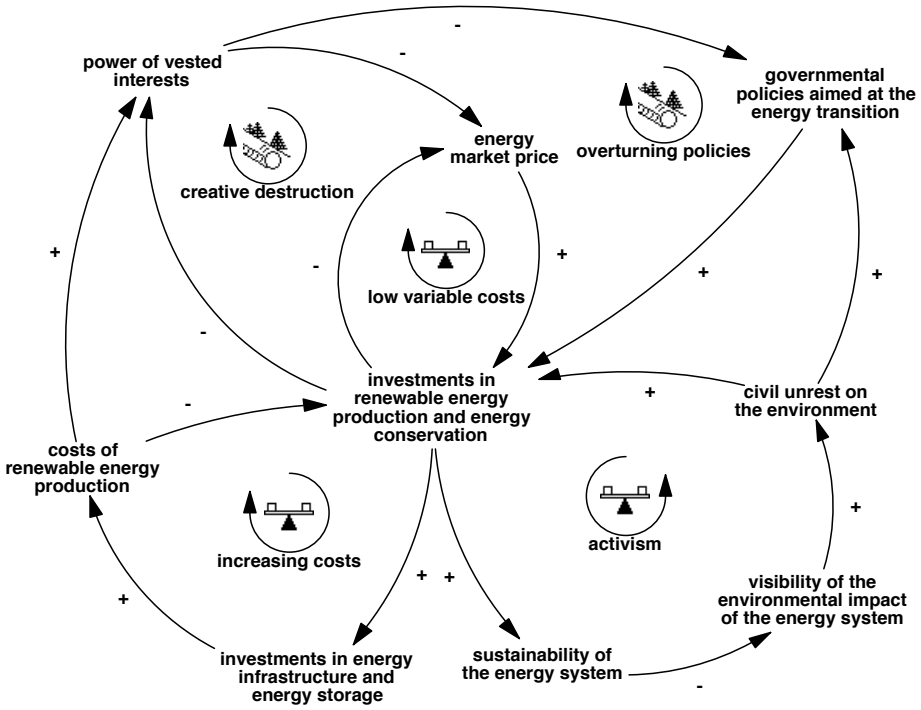


The strong position of the fossil industry was a recurring theme throughout the workshops. The exploitation of the Dutch gas reservoir and the historically grown position of fossil multinationals have as a consequence high vested interests, and these interests are seen as conflicting with a transition towards more sustainability. Two expressions of these interests are the following. First, the energy system is designed for fossil energy, which allows for large economies of scale for fossil energy and makes adaptations costly. This translates into a negative relation between the power of vested interests and the market price of energy. While the power of a single supplier would lead to a monopoly and *higher* prices, the reasoning in the workshops was that the high power of the fossil energy industry as a whole leads to economies of scale resulting in lower costs of producing fossil energy and thereby a *lower* energy price. Second, the Dutch national policy is geared towards fossil energy. The government depends on the gas exploitation for a substantial part of its income and the fossil industry has a large voice in setting policy. This translates into a negative relation between the power of vested interests and the extent to which the policy is geared towards energy transition.

Through investments in renewable energy production and energy conservation, the power of vested interests will decrease. When an increasing share of the system is adapted to renewable energy the economies of scale will appear in the renewable sector as well. Because of renewable alternatives the government will decrease its income based on fossil fuels and the new parties will gain a larger voice in stipulating new policy. Both mechanisms result in reinforcing effects. We label these processes creative destruction in the market for energy and overturning policies, see Figure 5.5.

There are two relations that relate the variables described earlier with the feedback loops we just described. The additional costs of investing in energy infrastructure and energy storage to meet the intermittency of renewable energy, mentioned earlier, strengthen the power of vested interests. In the workshops participants brought forward that the fossil industry uses the negative side effects of renewable energy to feed anxiety for negative effects of the energy transition, protecting their interest in this way. The civil unrest mentioned earlier that may follow from publicity on environmental problems increases the pressure on the government to adapt policies to facilitate the energy transition. Both relations are included in Figure 5.5. With these additions we finished the model that represents the core of the eight workshops.

Figure 5.5: Relation technological, ecological, social, economic, and political factors



5.6 Case analysis and recommendations

In the case study we made an attempt to explain policy resistance in the Dutch energy transition. In this section, we use findings from the model presented above to give policy recommendations, to illustrate how the system dynamics approach facilitates overcoming policy resistance. We conceptualized the energy system as consisting of several subsystems. The model as provided in Figure 5.5 shows how these subsystems interrelate, it shows how technological, ecological, social, economic, and political factors influence each other either directly or indirectly. The identified balancing feedback loops explain the policy resistance that plagues the Dutch energy transition. Some of these feedback effects, like the rebound effect (Antal and Van den Bergh, 2014; Herring and Sorrell, 2008) and the learning effect (Bergek and Onufrey, 2013) which we both described earlier in this chapter, have become well known within the literature and we will restrain from repeating them here. Below, we provide three directions of policy recommendations based on the findings from the model.

5.6.1 Use combinations of policies to mitigate side effects

Interventions that aim to improve only one of the subsystems of the energy transition will result in policy resistance in terms of unintended side effects in other subsystems, because of the strong relations between the subsystems as shown in Figure 5.5. One example of such an effect is the following. Imagine that the Dutch government would invest heavily in both energy conservation and renewable energy production. It follows from the model in Figure 5.5 that these investments would have a positive effect on the sustainability of the energy system, thereby lowering environmental concerns of citizens through the 'activism' loop. This will lead to lower investments by households in energy conservation and renewable energy production. In this way, there is a 'crowding out effect' of community-based investments by government spending (Menges, 2003; Popp, 2006; Van den Bergh et al., 2011). In general, policy resistance may be remedied by designing combinations of interventions that affect the different subsystems, so that unintended effects in related subsystems are counteracted. For example, one might envision government programs that do not crowd out private investments, for instance by combining conventional investments in energy conservation and renewable energy production with providing funds to support grassroots activities (Seyfang and Haxeltine, 2012; Walker et al., 2007), thereby diminishing the balancing effect of the 'activism' loop.

The need for an integrated approach is a direct consequence of considering the energy transition as a problem of the energy system as a whole (Hjorth and Bagheri,

2006; Meadows, 2008), and as such resonates with earlier calls for integrated approaches in the transition literature (Van den Bergh et al., 2011). An integrated approach acknowledges that the interests of stakeholders are interconnected (Freeman, 1984; Parmar et al., 2010). Rather than searching for optimal trade-offs, policies remediating policy resistance should be focused on enhancing the overlapping interests. A system of carbon taxation for example helps to align the interest of the fossil industry with the interest of environmental stakeholders, thereby increasing the effectiveness of the reinforcing 'creative destruction' loop.

5.6.2 Intervene to prevent the market from being spoiled by cheap energy

Besides the crowding out effect discussed above, investments in renewable energy production have a more direct unintended consequence. A counterintuitive insight that followed from the model is that subsidizing renewable energy production as a consequence lowers the incentive to invest in additional renewable energy production through the 'low variable costs' loop, thereby constituting policy resistance. Renewable energy production is characterized by high up-front costs and low variable costs. Once the renewable energy production capacity is installed, the energy market is supplied with energy that has low costs during times of high solar and wind energy (Sáenz de Miera et al., 2008; Sensfuß et al., 2008). Fossil energy production is faced with substantially higher marginal costs because generators continue to run on fuel. Several participants in the workshops mentioned the low, and on occasion even negative, spot prices on the German and Danish electricity market as an example of this effect. High electricity prices may be one of the reasons for energy consumers to decide to build their own renewable electricity production. In doing so, they lower their sensitivity to energy market price volatility. The decrease in energy market price due to the increased renewable energy production lowers the motivation for energy consumers to build their own capacity. To overcome this form of policy resistance, we recommend combining support for renewable energy production with other policies, like CO_2 pricing (Hirth and Ueckerdt, 2013), thereby diminishing the balancing effect of the 'low variable costs' loop.

5.6.3 Intervene to provide incumbents with a realistic exit strategy

Given a certain demand for energy, new energy production capacity is only necessary in the pace that old energy production capacity is decommissioned. Fossil power plants typically have a lifetime of several decades, and in the Netherlands several new

fossil power plants have recently been built (Graus and Worrell, 2009). This makes the Dutch energy transition substantially different from the transitions in countries that either do not currently have a large number of fossil power plants such as Denmark (Lund and Mathiesen, 2009), or countries that explicitly chose to close down nuclear power plants because of safety reasons such as Germany (Smith Stegen and Seel, 2013). If the Dutch energy transition objectives are to be met this asks not just for building renewable energy production capacity in addition to fossil capacity, but this asks for the *replacement* of fossil production capacity by renewable energy production capacity. Moreover, the model in Figure 5.5 shows that the two reinforcing feedback loops that speed up the energy transition both include the 'creative destruction' (Schumpeter, 1942) of the fossil industry. Because of their strong potential for change, leverage points are expected in these reinforcing feedback loops. Policies aimed at overcoming policy resistance by supporting this 'creative destruction' may consist of shifting investments from fossil industries and of reducing the threats that accompany such a shift by compensating financial losses for fossil companies (Arbuthnott and Dolter, 2013). Providing an exit strategy for incumbents is a strategy that could be applicable to various transitions, in a variety of locations, but especially applies to the Dutch energy transition, because of the important role that the gas and oil industry play in the Dutch energy system. If policies ensure a reasonable exit for incumbents, this may be an important way of overcoming policy resistance in de Dutch energy transition, by increasing the effectiveness of the reinforcing 'creative destruction' loop.

5.7 Discussion

Policy resistance is a persistent problem in sustainability transitions and current sustainability transition approaches have been insufficient to overcome policy resistance. Therefore, this chapter revolved around the research questions: why is policy resistance in the context of sustainability transitions such persistent, and which types of policies may be identified that help overcome policy resistance? System dynamics is an approach that claims to support understanding as well as overcoming policy resistance. This chapter provided a case study in which the system dynamics approach was applied to the case of the Dutch energy transition. As such, the case study provided an illustration of how system dynamics supports explaining the persistence of policy resistance, as well as how policies to overcome policy resistance may be identified. In this section, we discuss how system dynamics complements existing sustainability transition approaches.

5.7.1 Performing a balancing act between structure and agency

Like all studies in the social sciences, sustainability transition studies face the dilemma of either overemphasizing structure or overemphasizing agency (Emirbayer and Mische, 1998; Giddens, 1984). The pitfall of overemphasizing structure is that the explanation why things are as they are becomes so strong, that there seems to be no more room left for change. The dominant perspectives in sustainability transition literature, transition management and the multi-level perspective, have been criticized for exactly that (Genus and Coles, 2008; Smith et al., 2005, in Geels, 2011, Pesch, 2015). By emphasizing how hard it is to overcome the lock-in effects in systems, they lead to general, defeatist conclusions: sustainability transitions take generations to come about (Lachman, 2013), and only incremental changes are possible (Markard et al., 2012). While a focus on structure helps *understanding* why transitions are hard to come about, and supports *understanding* the phenomenon of policy resistance, it provides little help for identifying ways to *overcoming* policy resistance.

System dynamics has always had a paradoxical position in this respect: "attempts to relate system dynamics to strict notions of voluntarism or determinism quickly indicate that the field does not fit with either pole […], placing system dynamics with respect to traditional social theory is highly problematic" (Lane, 2001a, p. 97, see also Lane, 2001b). On the surface, a causal loop diagram seems to be strongly fatalistic in its nature. It provides an extensive description of all causal relations that matter to a system, suggesting that once a course of action has started, nothing will be able to change the path of events that has been set in motion. On second thought however, it becomes clear how agency has been at the heart of the approach from the start. In system dynamics, the only reason to draw causal loop diagrams is to find those policy levers that best allow decision makers to steer the system in the desired direction. Although the structure of the system, the relations that determine how variables coevolve, may be unalterable, agents have discretionary space to adjust the parameters that determine the strength of the different relations throughout this structure. Sustainability transitions are deeply embedded in the structures of social reality. Individual (groups of) decision makers either face this in the form of policy resistance when trying to implement policies that failed to take this embeddedness into account, or they use it in their favor by designing policies based on a thorough understanding of that structure. System dynamics provides an approach that aids the development of such an understanding, thereby complementing the transition management approach and the multi-level perspective. By providing a middle ground between overemphasizing structure or agency, system dynamics is in position to support both understanding and overcoming policy resistance.

5.7.2 Mapping the structure of the system

Sustainability transitions are prone to policy resistance. The aim of this chapter was to enrich the toolbox of sustainability transition scholars and policy makers with system dynamics, in order to put them in a better position to cope with policy resistance. We found the system dynamics approach as a field that explicitly addresses policy resistance (Forrester, 1971a; Ghaffarzadegan et al., 2011; Head and Alford, 2015; Sterman, 1994). How then does this approach differ from the dominant sustainability transition approaches, and how does it complement them? As illustrated in this chapter with the case of the Dutch energy transition, system dynamics supports improving understanding a system by drawing up the feedback loops that together determine the results that policies shall have, in our case study in the form of a causal loop diagram (Forrester, 1961; Richardson, 1991; Senge, 1990; Sterman, 2000; Vennix, 1996). By identifying the feedback loops, causal loop diagrams uncover the source of policy resistance (Ghaffarzadegan et al., 2011) and support the identification of high leverage points within those feedback loops (Forrester, 1971a).

Drawing up a causal loop diagram fits in the 'problem structuring' phase of the transition management cycle, a governance process as prescribed in the transition management approach (Loorbach, 2010). During the problem structuring phase, various stakeholders collaborate to unravel the complexity of the system at hand (Loorbach, 2010, p. 173 and further). System dynamics may be used in this step to improve the extent to which the transition management approach is able to deal with policy resistance.

The multi-level perspective focuses on the interfaces of technology niches and existing regimes (Kemp, 1994). Drawing up a causal loop diagram may also assist such an effort because such a diagram could include both levels. The diagram of the Dutch energy transition in this chapter for example included different levels by showing how investments in renewable energy and energy conservation are driven by and impact broader communities, politics and markets. It may as such be seen as an analysis of where technology and existing regimes meet.

Although the multi-level perspective has become an enormously rich tradition with a wide collection of case studies on transitions, it provides little guidance to how a system should be systematically charted (Berkhout et al., 2004; Genus and Coles, 2008; Markard and Truffer, 2008, in Geels, 2011, p. 31). System dynamics may complement the multi-level perspective by providing a procedure for systematically determining which technological niches and which existing regimes are relevant to a certain system, what their relevance consists of, in what way this results in policy resistance and how this may be overcome.

5.8 Limitations

5.8.1 Robustness over completeness

The data used in the current chapter consists of over 40 hours of discussions between experts from the energy industry. This provided us with a very rich source of data, and a very large challenge to simplify the data in order to be able to present a compelling and insightful model. As described earlier in the chapter we simplified our model by aggregating eight separate models into one summarizing model. In this aggregation, we prioritized comprehensibility over comprehensiveness. Instead of trying to include all details that were brought to table by all energy experts, we only included those phenomena that were described in all of the eight separate workshops, as is shown in Appendix D. As a consequence, the model presented in this chapter does not include everything that was discussed during the workshops. Rather, it is representative of those things on which there was considerable consensus between the energy experts. Therefore, the model should be seen as a robust image of some of the most important phenomena that help explain policy resistance in the Dutch energy system. As a downside, the model may not be seen as a *complete* image of the energy system and leverage points for overcoming policy resistance may exist outside the phenomena on which experts agree.

5.8.2 How many stakeholders are enough?

Like all methods that rely on the input of participating experts, our study only answers the research question in so far as this answer was 'in the room'. We used no other data than the discussion between the various experts in our study. Reliability of the results could be improved by including an even larger variety of experts, or by including other types of data to triangulate our findings (Bleijenbergh et al., 2010). Due to the nature of our selection process only energy experts participated in the workshops. In future research it would be recommended to consider involving other parties, like consumer related groups, in order to provide an even wider variety of viewpoints on the energy system.

Although we succeeded in taking a range of aspects into account, we had to choose a boundary for our analysis. We chose to limit our analysis to the Dutch energy system, ignoring the potential of changing European (Helm, 2014; Kanellakis et al., 2013) or global energy policies. Future studies may broaden this boundary.

5.8.3 Blind spot for politics

System dynamics supports remediating policy resistance by providing a better understanding of dynamic systems. By identifying the balancing feedback loops that give a system the tendency to return to its previous state, even after interventions, policy makers are informed about the structure underlying the system causing its behavior. This implies that system dynamics can only be helpful in remediating policy resistance in so far as this resistance was caused by a limited perception of the system at hand, by a "misperception of feedback" (Sterman, 1994, p. 303). A perfect perception of the system however, is not a sufficient condition to overcome policy resistance. Although not within the scope of this chapter, other sources of policy resistance may (co-)exist. The power dimension of implementing policies can be seen as one of such sources. Policy makers may have a flawless understanding of the system they want to intervene in, but if individual stakes prevent them from coming to an agreement on implementing high leverage policies, such an understanding will not lead to improvements. In this way, system dynamics seems to have a blind spot that is similar to those of the dominant transition approaches, the multi-level perspective and transition management. These too have been criticized for their lack to address the political dimension of the policy process (Avelino, 2009; Geels, 2011; Kern and Smith, 2008).

This chapter described the shared frame of reference that resulted from strategy workshops on the topic of the Dutch energy transition, as well as its implications. An important characteristic of the Dutch energy transition is its policy resistance, the tendency of decisions to have little impact on the system as a whole. This chapter argued that group model building provides an operational research tool that is specifically suitable to understand and overcome policy resistance.

The next chapter concludes this thesis and discusses the main findings and their implications.

Chapter 6

Conclusion and discussion

This thesis revolved around the topic of simultaneously taking multiple stakeholders into account in an organization's strategic decision making process (Freeman, 1984; Parmar et al., 2010). Motivated by the unanticipated resistance by stakeholders that strategic decisions sometimes meet, the objective of this research was to put organizations in a better position to avoid such resistance from stakeholders. Therefore, the overarching question of this thesis was: what does it take for an organization to simultaneously serve the interests of multiple stakeholders? An improved understanding in this respect helps to avoid turning back strategic decisions after they have been made, preventing the associated costs. This thesis showed that an important problem for managing for stakeholders is the tendency of managers in an organization to develop a biased perception of their organization's environment. Inter-organizational strategy workshops in the form of group model building sessions proved to be fruitful in surfacing and resolving cognitive conflicts that proved to exist between internal and external stakeholders.

The research described in this thesis was carried out in collaboration with Alliander N.V., owner of the Dutch distribution system operator Liander N.V. Despite its high ambition to simultaneously take the interests of multiple stakeholders into account in its strategic decision making process, Alliander met unanticipated resistance of customers during the Dutch smart meter rollout. This motivated collaborating on improving the position of organizations to simultaneously satisfy the interests of multiple stakeholders.

Earlier studies on this topic have been scattered across disciplines. This thesis combined three bodies of literature: stakeholder theory, managerial and organizational cognition, and operational research. To conclude the thesis, a summary of the main findings per chapter is provided below. The conclusion is followed by a discussion of the main contributions of this thesis for the three separate disciplines. Afterwards, the managerial implications are discussed, as well as limitations and directions for future research.

6.1 Summary of the main findings per chapter

6.1.1 Chapter two: stakeholder-oriented capabilities

Stakeholder theory (Freeman, 1984; Parmar et al., 2010) argues that an organization's successfulness depends on its capacity to simultaneously satisfy the needs of its customers, suppliers, employees, communities, and financiers. Chapter two revolved around the question what it means to be successful in simultaneously taking multiple

stakeholders into account, what are the required organizational capabilities? The findings consisted of the proposition of three of such stakeholder-oriented capabilities. *Entrepreneurial capabilities* are important because an organization needs to find innovative solutions where the interests of stakeholders are aligned in order to avoid having to resort to making trade-offs where the interest of one stakeholder is only served at the cost of the interest of another stakeholder. *Coordination capabilities* are important because spending time on the entrepreneurial effort to find innovative solutions requires a trade-off between this priority and other strategic priorities that an organization has to attend to. *Legitimacy capabilities* are important because skeptical stakeholders need to be convinced of the merits of adopting a broad stakeholder orientation.

6.1.2 Chapter three: operational research tools for creating stakeholder value

While chapter two focused on the question why it is so challenging for organizations to simultaneously satisfy the needs of their stakeholders, chapter three focused on potential solutions. Operational research is a scientific tradition in which various kinds of tools have been developed that support simultaneously taking multiple stakeholders into account in strategic decision making (Churchman et al., 1957; Liebl, 2002). However, these tools vary widely in the specific importance they attribute to stakeholders. To facilitate linking the challenge an organization faces with the appropriate tools, chapter three provided an overview of operational research tools, presented in the form of four traditions: *optimization*, *insights in trade-offs*, *understanding the problem*, and *managing the boundaries*. In *optimization*, goals and constraints are defined by sets of mathematical relationships that provide a single best solution to a given problem. *Insights in trade-offs*, the largest tradition, focuses on providing insights in how satisfying the interest of one stakeholder comes at the cost of the interests of others. *Understanding the problem* is aimed at structuring the problem at hand, thereby allowing 'increasing the size of the pie', in addition to just 'dividing the pie'. *Managing the boundaries* is focused on involving stakeholders, where intensive participative processes are used to give voice to minority stakeholders.

6.1.3 Chapter four: creating a shared frame of reference with external stakeholders

Chapter two showed that one particular challenge to simultaneously taking multiple stakeholders into account is the gap that may exist between what an organization

perceives as the interests of their stakeholders, and what these stakeholders see as their interests themselves. Chapter three showed that the operational research tradition *understanding the problem* is expected to be especially suited to bridge such a gap. Chapter four consisted of a case study where an organization in the Dutch energy industry experimented with an 'open strategy' in the form of group model building workshops aimed at bridging the gap between internal and external stakeholders. As such the chapter provided an illustration of how the *understanding the problem* tradition helps overcoming a biased perception of stakeholder interests. The main finding was that these workshops indeed resulted in an increase of shared cognition between the participants. The results varied however between workshops, which could be explained by two main factors. The first factor is the initial shared cognition within a group of participants: if the group already has a shared frame of reference to begin with, it is hard to increase the extent to which they have a shared frame of reference. The second factor is the skillful adoption of framing strategies by the participants. The chapter showed that creating a shared frame of reference requires a delicate balance between frame building and frame relating.

6.1.4 Chapter five: a shared frame of reference on the Dutch energy transition

The workshops in chapter three succeeded in creating a shared frame of reference on the topic of the Dutch *energy transition*: the structural change towards a more sustainable energy system. This is particularly interesting since policies aimed at facilitating such a transition so far has been unsuccessful, a phenomenon that is known as *policy resistance*. Chapter four shows the model that represents the shared frame of reference on the energy transition, including the interrelations of social, economical, political and technological elements.

6.2 Contribution to the literature

6.2.1 Stakeholder theory

Instrumental stakeholder theory has convincingly showed that focusing on simultaneously satisfying the interests of multiple stakeholders is advantageous for the performance of an organization (Berman et al., 1999; Choi and Wang, 2009; Clarkson, 1995; Hillman and Keim, 2001; Preston and Sapienza, 1990). This has lead to a recent trend in trying to explain why some firms adopt such a broad stakeholder

orientation, while others do not (Adams et al., 2011; Crilly, 2011; Crilly and Sloan, 2012; Crilly et al., 2012; De Luque et al., 2008; Kacperczyk, 2009; Shropshire and Hillman, 2007). Adopting a broad stakeholder orientation is not a sufficient condition for increasing an organization's performance and more recently scholars have begun to look into the question *how* organizations create stakeholder value (Garcia-Castro and Aguilera, 2015; Tantalo and Priem, 2014). Chapter two contributes to this emerging line of research by providing a proposition of the stakeholder-oriented capabilities that an organization requires to successfully satisfy the interests of multiple stakeholders. As such, chapter two provides insight in the conditions under which stakeholder theory indeed proves to be instrumental.

6.2.2 Managerial and organizational cognition

In the managerial and organizational cognition literature it is well known that frames, or mental models, within organizations converge, leading to peripheral blindness (Chattopadhyay et al., 1999; Day and Schoemaker, 2004; DiMaggio and Powell, 1983; Grant, 2003; Hodgkinson and Sparrow, 2002; Pina e Cunha and Chia, 2007; Prahalad, 2004). This is especially problematic for organizations in turbulent environments, because frames under such conditions are easily rendered obsolete (Hodgkinson, 1997; Porac et al., 1989; Reger and Palmer, 1996; Tripsas and Gavetti, 2000). A growing line of research has been studying this phenomenon as well as potential actions an organization can take to mitigate such a bias (Hodgkinson et al., 2006). Chapter four added to this line of research by showing the role of inter-organizational strategy workshops, in our case in the form of group model building sessions, in creating a shared frame of reference, thereby decreasing an organization's peripheral blindness. Moreover, this chapter refined earlier models of how creating a shared frame of reference comes about (Benford and Snow, 2000; Cornelissen and Werner, 2014; Gioia and Chittipeddi, 1991; Kaplan, 2008; Snow et al., 1986; Weick). Chapter five presented how such a shared frame of reference can be represented in the form of a model.

6.2.3 Operational research

Stakeholders have always played an important role in operational research (Churchman et al., 1957; Liebl, 2002). What this importance entails exactly however often remains implicit. Chapter three contributed to operational research literature by exposing the implicit assumptions about the role of stakeholders that various operational research traditions make. By uncovering these assumptions, the chapter

helps future operational research studies in making a better informed decision on the role of stakeholders in their specific study.

While group model building is a widely adopted operational research tool, systematic studies on group model building sessions and their outcomes are rare (Rouwette et al., 2011). Chapter four contributed to studies on group model building by showing that the eight workshops in our case study succeeded in increasing shared cognition, and by providing a model of how the forming of a shared frame of reference in such sessions comes about.

Chapter five showed an application of group model building on the Dutch energy transition. Moreover, it compared group model building to other transition approaches (Lachman, 2013; Markard et al., 2012; Van den Bergh et al., 2011). It found that group model building adds to the dominant transition approaches by mapping out the structure of the system that is responsible for policy resistance, and by finding a middle way between focusing on agency and focusing on structure, allowing for the combination of explaining policy resistance on the one hand and identifying potential solutions on the other.

6.3 Managerial implications

Chapter two showed several barriers that may prevent creating stakeholder value. An important barrier is formed by the gap that may exist between the interpretations that exist within an organization, and the interpretations as held by its stakeholders, a phenomenon that is referred to as peripheral blindness (Day and Schoemaker, 2004; Prahalad, 2004). The Dutch smart meter rollout was an example of unanticipated resistance as a consequence of overlooking the interests of an important stakeholder, in this case the consumers (Hoenkamp et al., 2011). Managers need to take into account that what they perceive as the interest of their stakeholder may not be the same as what their stakeholders perceive as their interest.

Chapter three showed how different operational research traditions facilitate various ways of simultaneously taking multiple stakeholders into account. The chapter confirmed the potential of group model building to help organizations address their peripheral blindness. When managers suppose that interpretations of a strategic issue differ between internal and external stakeholders, they could consider organizing inter-organizational strategy workshops in the form of group model building sessions in order to get a step further in creating a shared frame of reference. Chapter four brought forward two factors that are important determinants of the outcome of such workshops. Managers should make sure that they invite stakeholders

that indeed vary in their mental models, and facilitators of such sessions should guard the delicate balance between frame building and frame relating that the creation of a shared frame of reference requires.

6.4 Limitations and directions for further research

Chapter two proposed the stakeholder-oriented capabilities an organization requires in order to successfully create stakeholder value. The findings stressed that paradoxically, organizations need to make tradeoffs between putting effort in finding innovative solutions that avoid having to resort to making tradeoffs between the interests of different stakeholders, and putting effort in other strategic priorities. This implies that a top management team needs to be aware that putting pressure on adopting a broader stakeholder orientation may come at the cost of other priorities such as operational excellence, where innovative solutions are seen as a threat to optimizing routinized procedures. Research on how organizations create value for stakeholders is just taking off (Garcia-Castro and Aguilera, 2015; Tantalo and Priem, 2014). Future research is needed to put scholars in the position to further aid organizations in creating stakeholder value and diminishing any negative side-effects that such an effort could have.

Chapter three identified how group model building sessions can play a role in creating a shared frame of reference between internal and external stakeholders, chapter four gave an example of such an approach and chapter five showed the results of the sessions on the topic of the Dutch energy transition. These sessions provide a structured way of intensifying the stakeholder dialogue that many organizations already have, but it offers no panacea. A shared frame of reference as the result of inter-organizational workshops always concerns a certain strategic issue, and therefore, for each strategic issue where a gap between internal and external stakeholder's interpretations is to be expected, additional workshops are needed to address also those topics. These workshops may help prevent unanticipated resistance after strategic decisions are made, but require substantive efforts from all stakeholders in the form of their participation in the sessions. Besides, even after these investments, cognitive conflicts may still prove to be unresolved. Future research may expand knowledge on the conditions under which inter-organizational workshops are effective in creating a shared frame of reference. Important factors in this respect are the various types of conflicts that may surface within such workshops, for example cognitive conflicts, inter-personal conflicts and their interactions (De Wit et al., 2012). Our research showed that the outcome of inter-organizational strategy

workshops depends on the skillful adoption of framing strategies by the participants. Future research may show why some participants are more skillful in nurturing the creation of a shared frame of reference than others, and how this depends on their characteristics such as their place in the organizational hierarchy (Rouleau, 2005).

While inter-organizational strategy workshops decrease the odds of unanticipated resistance, there is no way of guaranteeing that all potential conflicts are surfaced. However, examples such as the Dutch smart meter rollout controversy (Hoenkamp et al., 2011) show that the costs of turning back decisions after they have been made may well exceed the costs of engaging in strategy workshops.

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Appendix A

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Appendix B

Key issues in the energy transition

Strategic ends (frequency betewen brackets)
1. Affordability of the energy system (30)
2. Improving the job market by investing in the energy system (11)
3. Improving the Dutch natural environment (13)
4. Countering climate change (65)
5. Decreasing the dependability on other regions for energy (25)
6. Setting an example for other regions (4)
7. Honoring international agreements (6)
8. Securing possibilities of future generations to meet their needs (3)
9. Improving competitiveness by gaining a technological lead (16)
Technological means (frequency betewen brackets)
10. Carbon capture and storage (5)
11. Hybrid vehicles (3)
12. Solar panels (9)
13. Shale gas (2)
14. Intelligent traffic management (4)
15. Concentrated solar power (4)
16. Coal plants (9)
17. Biofuels (7)
18. Geothermal energy (2)
19. Gas plants (2)
20. Electric vehicles (2)
21. Wind power on land (13)
22. Nuclear energy (5)
23. Conservation in the industry (5)
24. Wind power on sea (3)
25. Biomass (5)
26. Conservation in buildings (19)
27. Combined heat and power (2)
28. Investing in electricity grids (6)
29. Using waste heat (3)
30. Energy storage (4)
31. Smart metering (3)
32. Aquifer storage and recovery (3)
33. Hydrogen (9)
34. Blue energy (3)
Policy means (frequency betewen brackets)
35. Subsidies for sustainable energy production (24)
36. Stricter regulations in the form of norms and obligations (22)
37. Decrease the frequency of changing energy policies (19)
38. Subsidies for energy conservation (8)
39. Improve the balancing of different stakes when defining energy policy (13)
40. Encourage new models of markets (7)
41. Fund for innovations in energy conservation and production (8)
42. Stricter certification of sustainable energy (4)
43. CO2 trading systems (10)
44. More ambitious international climate agreements (9)
45. Improving awareness by education (8)
46. Higher taxes on fossil energy (19)
47. Take away barriers in rules and regulations (9)

Appendix C

Workshop level shared cognition

Workshop:	1		2		3		4		5		6		7		8	
N:	10		9		10		9		14		12		8		14	
Before/after:	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a
Strategic ends																
1	s	s	s	s	s	s	s	s	s	n	s	s	n	n	n	s
2	s	s	n	s	s	s	s	s	n	s	s	n	s	s	s	s
3	s	s	s	s	s	n	s	s	s	s	s	s	n	n	s	s
4	s	s	s	s	n	n	s	s	n	s	s	s	s	n	s	s
5	s	s	n	s	s	n	s	s	s	s	n	n	s	s	s	s
6	n	s	s	s	s	s	s	s	s	n	s	s	n	s	s	n
7	s	s	s	n	n	n	s	s	n	n	n	s	n	n	s	s
8	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s
9	s	s	s	s	s	s	s	s	s	s	s	n	s	s	s	s
Technological means																
10	n	n	s	s	n	n	s	n	n	n	n	n	n	n	n	n
11	n	n	n	n	n	n	n	s	n	n	n	n	n	n	n	n
12	n	n	n	s	n	n	n	n	n	n	n	n	n	n	n	n
13	s	s	s	s	s	s	n	s	n	n	n	s	n	n	n	n
14	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n
15	s	s	n	s	n	s	s	s	s	s	n	s	n	n	n	n
16	n	s	s	s	s	n	s	s	s	s	n	s	s	n	n	s
17	s	s	n	s	s	s	s	n	n	s	s	s	n	s	n	s
18	s	n	n	n	n	n	s	s	n	s	n	s	n	n	n	n
19	n	s	n	n	s	s	s	n	s	s	s	n	n	s	n	n
20	s	s	s	s	s	s	s	s	n	s	n	n	n	s	n	s
21	n	s	s	s	s	s	s	s	n	s	n	s	s	n	n	n
22	n	n	s	s	s	s	s	s	s	s	s	s	s	n	n	n
23	n	s	s	s	s	s	s	s	s	s	s	s	s	s	n	s
24	n	s	n	s	s	s	s	s	n	n	s	s	s	s	s	s
25	s	s	s	s	s	s	s	s	s	s	n	s	s	s	s	s
26	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s
27	s	s	n	n	n	s	s	s	n	s	n	n	n	s	n	n
28	n	s	n	n	n	n	n	s	s	s	s	n	s	s	n	s
29	n	s	n	n	n	s	n	n	s	s	n	n	n	n	n	s
30	n	s	s	n	s	s	n	s	s	s	s	s	n	s	n	s
31	s	s	n	n	n	s	s	s	s	s	s	s	n	s	s	s
32	s	s	s	s	n	s	s	s	s	n	s	s	n	n	s	s
33	s	s	s	s	n	s	s	s	n	s	s	s	n	n	n	n
34	s	n	s	s	s	s	s	s	s	s	n	n	s	s	n	s
Policy means																
35	s	s	n	s	s	s	s	s	s	n	n	n	n	n	s	s
36	s	n	n	s	n	s	s	s	s	s	s	s	s	n	n	s
37	s	s	s	s	s	s	n	s	s	s	s	s	s	s	s	s
38	n	n	n	n	n	n	n	n	s	n	n	n	n	n	n	n
39	s	s	n	n	s	n	s	s	n	s	n	n	n	n	n	n
40	s	s	s	n	n	n	s	s	s	n	n	s	n	n	n	n
41	s	s	s	n	s	s	s	s	s	s	n	s	n	n	s	n
42	s	s	s	n	s	n	s	s	n	s	n	n	n	s	n	n
43	s	s	n	s	n	s	s	s	s	s	s	n	n	s	n	s
44	s	s	s	s	n	s	s	s	n	n	s	s	n	n	s	s
45	n	s	s	s	n	s	s	s	n	s	n	s	s	s	n	n
46	s	s	s	s	s	s	s	n	s	s	n	s	n	n	n	s
47	n	s	n	n	s	s	n	n	n	n	n	n	n	n	n	n

N = number of participants; b = before; a = after; s = shared cognition (inter quartile range <= 1); n = no shared cognition (inter quartile range > 1)

Appendix D

Quotations per workshop per feedback loop

Workshop	*Loop 1 'Increasing costs'*
1	8: "If you want to use renewable sources like wind and the sun that can not be controlled, you will have to store energy. 2: "Unless you could use information technology to manage the demand side." 2: "It is very costly [...] the more flexible you want to be, the more costly it is."
2	2: "If you look at wind energy for example, that is inherently intermittent."
3	5: "Energy storage. I think that eh, especially for solar and wind, if you're betting on those two, you have to take the intermittency into account."
4	3: "It is difficult to switch to renewable energy, because it requires huge additional investments."
5	12: "Supply and demand, those two should be balanced […] Energy storage is an essential part of the solution." 2: "The location of supply and demand is often far apart […] you will have to invest in transportation."
6	6: "Renewable energy is often intermittent, fossil energy is much more flexible."
7	9: "The production of renewable energy is intermittent, so you have to store energy, or transport it to distant locations." 6: "That's how you get to smart grids." 10: "Demand side management."
8	15: "The aspect of time is very important for renewable energy, and therefore the availability of energy storage." 6: "In the end it is about the balance between supply and demand […] You could change the tariffs, there are several ways to influence demand."

Workshop	*Loop 2 'Activism'*
1	12: "I'm thinking about awareness of energy consumption"; 7: "[Investments in sustainability such as solar panels], that's an issue of awareness."
2	6: "If the big energy companies fail to address the greening of the energy system, people start to get convinced they have to do it themselves." 2: "[CO2 emissions] would result in civil unrest, if it is perceived as detrimental to the future of our planet". 5: " [Especially] if there are catastrophes..." 6: "If it's very direct, very visible..."
3	9: "Decentralized energy [...] stimulates the production of renewable energy." 10: "Those initiatives emerge from climate awareness, aversion of large energy corporations, the desire to be independent, that sort of factors."
4	5: "Societal legitimacy could be added […] of wind, carbon capture and storage."
5	3: "In my perception, the transition is about the individual, about autonomy and ehm, local.." 4: I'm convinced that there is an enormous drive in eh, a group to change the energy system." 13: "I think we at least agree that if awareness increases, the consumption of fossil energy decreases." 10: "There is certainly a relation there: if [energy consumption] is harmful, and that's what we've seen, then [the energy transition] becomes more urgent."
6	8: "Look, if we would all give a high priority to [the energy transition], if we would all feel the urgency, then it would simply come about." 12: "If the CO2 emissions increase […] the sense of urgency will also increase." 2: "Exactly, it's a circle."
7	3: "Climate can be linked to climate awareness, and then you can close the loop by linking awareness with eh, behavior." 7: "[If climate awareness increases] the environmentally conscious behavior of consumers will increase." 9: "I think [If climate awareness increases], the political commitment will increase, the political will to change." 3: "And decentralized energy production will increase." 6: "As well as energy conservation."
8	1: "Sense of urgency […] to what extent do people realize that the energy transition is really necessary." 15: "That will cause the energy consumption to drop, the production of renewable energy will increase."

Workshop	*Loop 3 'Low variable costs'*
1	7: "If the costs of energy go up, companies will start to innovate, they will look for new solutions." 6: "The price of electricity has decreased, because of the surplus in production capacity."
2	6: "The higher the production of renewable energy, the lower the price of electricity. That's very strange, counterintuitive, but that is what is happening right now […]." 2: "That's true, because the market price is based on the marginal cost of production and for various forms of renewable energy the costs are not in the operation, but in the initial costs."
3	5: "You have to do the initial investments, both for fossil energy and for renewable energy. But for renewable energy, that's it, while for fossil energy you continue to pay for coal and gas."
4	10: "It's a law that also holds in other domains, for example: the moment we invent faster means of transportation, people will not spend less time travelling, but they will travel further […] The rebound effect […] If you save on energy consumption on one place, it pops up in another place."
5	5: "The driver for the head of a household to contribute to the energy transition is primarily price based, I'm certain of that."
6	8: "If there is a surplus in supply, the price will go down."
7	1: "[Take the example of supermarkets that lower their prices], it has been shown that as a consequence, consumers spend more." 10: "Yes, that's the rebound effect." 3: "If the price of fossil energy goes up, the payback period of investments in the energy transition decreases. That's one of the strongest drivers to become more sustainable. It's a risk for the energy transition that shale gas causes energy prices to drop." 7: "If the costs go up, you will try to find different solutions."
8	15: [If the price of fossil energy goes up], there will be more investments in renewable energy."

Workshop	*Loop 4 'Creative destruction'*
1	3: "I'm thinking of eh, amortization, or eh, the lifecycle of infrastructure." 7: "Technology lock-in." 3: "Yes, that's it. So if you can think of something to speed up the amortization, you support the energy transition."
2	6: "I seriously believe that there is a crisis in the boardrooms of [the large energy corporations]." 2: "The business model does not fit the current and future market conditions." 6: "If there is a lot of renewable energy production, the natural gas power station is no longer profitable."
3	11: "Power stations are not built for just ten years." T: "[Lock-in] caused by the accumulation of investments in the infrastructure of the energy system." 4: "The higher the accumulated investments in the fossil energy infrastructure, the lower the market price of fossil energy will be, compared to renewable energy. That's part of the lock-in effect."
4	10: "The inertia of existing infrastructures." 3: "The whole system, both demand and supply, are designed for fossil energy." 10: "It's the power of vested interest." 3: "Yes, the lock-in effect."
5	7: "Power, influence, financial interests of the actors eh, from the old paradigm. […] If [a large energy corporation] wants to dig for shale gas, that will happen in The Netherlands." 7: "And this might tip over to the power of the cleantech industry." 2: "[The power of vested interests] influences the production of renewable energy not directly but, I believe, through price mechanisms."

6	3: "Interests, or eh, resistance to change." 12: "The power of vested interests." 3: "Some actors try to maintain the current situation." 9: "You could say that the vested interests have power, but the new actors also have power, it's about the ratio of those two."
7	8: “If you have more innovation in fossil exploration for example, this brings down the price of fossil energy.”
8	1: “The energy transition […] is the total replacement of fossil energy by renewable energy.”

Workshop	***Loop 5 ‘Overturning policies’***
1	9: "Encouraging policies, that support sustainability […] those would contribute to the energy transition." 2: "For example the possibility of net metering, those sort of things." 10: "The taxes on energy, that's an important driver."
2	6: "It's often the government that reacts to such a growing societal concern [...] if everybody screams for renewable energy the government will take measures". 3: "We know that [natural gas] is the government's cash cow. Subsidies shouldn't compete too much with the governments current cash flows."
3	11: [The lock-in effect of the power of the vested interests] also includes the government and its financial dependencies." ?: "I believe it's very important for societal legitimacy that a lot of energy is produced decentralized [and] I believe that eventually, if there is more legitimacy, that consistent governmental policies will follow".
4	11: "The government's business model. They depend on eh, the income from natural gas and so on, to maintain a healthy financial situation."
5	4: "If we hadn't any interest in natural gas, we would have had more wind energy." 3: "[Investments in renewable energy are influenced by] all kinds of regulations, such as whether net metering is allowed or not." 6: "If awareness [on the necessity of the energy transition] increases, this increases the legitimacy of policy measures." 3: "I think that eh, the power of vested interests are involved in determining where subsidies are spent."
6	9: "The legal framework: tax policies is one of them, but also regulations eh, and subsidies. I believe the legal framework is crucial in explaining the current progress of the energy transition."
7	7: "Encouraging policies could lead to […] an increase in the production of renewable energy. [The current subsidy on renewable energy] simply reduces the payback period of solar panels." 1: "From climate awareness, you could reason, via policital commitment, stimulating policies will emerge."
8	1: “Rules and regulations, in general, are a very important variable.” 3: “A reduction in regulations that form a barrier for the energy transition.”

English Summary

The successfulness of an organization depends on its capacity to simultaneously satisfy the needs of its customers, suppliers, employees, communities, and financiers (Freeman, 1984; Parmar et al., 2010). Overlooking the interests of one or more of these stakeholders when making strategic decisions may result in large conflicts that typically attract a lot of media attention. An example of such a conflict is the smart meter rollout in The Netherlands: fed by concerns about privacy and safety consumers resisted the implementation of smart meters in their home and this finally led to a delay of eight years (Hoenkamp et al., 2011). The objective of this research was to better understand why strategic decisions sometimes encounter unanticipated resistance from stakeholders. An improved understanding of what it takes to simultaneously satisfy the needs of multiple stakeholders supports organizations to avoid turning back strategic decisions after they have been made, preventing the associated costs.

This research was conducted at an organization that aims to improve its capacity to simultaneously satisfy the needs of its stakeholders: Alliander N.V., owner of one of three large Dutch distribution system operators (in Dutch: 'netbeheerders'). Simultaneously taking multiple stakeholders into account in strategic decision making is a considerable challenge and the smart meter controversy shows that organizations may overlook the interests of stakeholders even despite their ambition not to do so. Chapter two of this thesis used interviews with Alliander employees and its stakeholders to investigate what makes this challenge so hard. The findings consisted of the proposition of three stakeholder-oriented capabilities that organizations require in order to create stakeholder value. *Entrepreneurial capabilities* are important because an organization needs to find innovative solutions where the interests of stakeholders are aligned in order to avoid having to resort to making trade-offs where the interest of one stakeholder is only served at the cost of the interest of another stakeholder. *Coordination capabilities* are important because spending time on the entrepreneurial effort to find innovative solutions requires a trade-off between this priority and other strategic priorities that an organization has to attend to. *Legitimacy capabilities* are important because skeptical stakeholders need to be convinced of the merits of adopting a broad stakeholder orientation. The chapter contributed to stakeholder theory by showing under which conditions simultaneously satisfying the interests of multiple stakeholders proves to be instrumental.

Chapter three focused on potential operational research tools that aid in creating stakeholder value. To identify which tool could be suitable for the specific barriers that organizations encounter when trying to create stakeholder value, chapter three provided a systematic review of operational research studies that have been concerned with stakeholders, which resulted in the finding of four distinct traditions:

optimization, *insights in trade-offs*, *understanding the problem*, and *managing the boundaries*. In *optimization*, goals and constraints are defined by sets of mathematical relationships that provide a single best solution to a given problem. *Insights in trade-offs*, the largest tradition, focuses on providing insights in how satisfying the interest of one stakeholder comes at the cost of the interests of others. *Understanding the problem* is aimed at structuring the problem at hand, thereby allowing 'increasing the size of the pie', in addition to just 'dividing the pie'. *Managing the boundaries* is focused on involving stakeholders, where intensive participative processes are used to give voice to minority stakeholders. Chapter three contributed to operational research literature by exposing the implicit assumptions about the role of stakeholders that various operational research traditions make. By uncovering these assumptions, the chapter helps future operational research studies in making a better informed decision on the role of stakeholders in their specific circumstances.

From chapter two it showed that an important barrier to stakeholder management is the observation that decision makers inside an organization tend to hold a biased perception of their organization's environment. From chapter three it showed that *understanding the problem* provides a tradition that has the potential to support organizations to decrease such a bias, by including external stakeholders in a systematic structuring of specific problems that an organization and its stakeholders face. To explore the potential of such an approach, chapter four describes the analysis of eight video recorded group model building workshops with external stakeholders that Alliander organized. The main finding was that these workshops indeed resulted in an increase of shared cognition between the participants. The results varied however between workshops, which could be explained by two main factors. The first factor is the initial shared cognition within a group of participants: if the group already has a shared frame of reference to begin with, it is hard to increase the extent to which they have a shared frame of reference. The second factor is the skillful adoption of framing strategies by the participants. It showed that creating a shared frame of reference requires a delicate balance between frame building and frame relating. Chapter four added to managerial and organizational cognition literature by showing the role of inter-organizational strategy workshops, in our case in the form of group model building sessions, in creating a shared frame of reference, thereby decreasing an organization's peripheral blindness. Moreover, this chapter refined earlier models of how creating a shared frame of reference comes about (Kaplan, 2008; Snow et al., 1986).

In the eight group model building workshops, stakeholders built a model of the Dutch energy transition. While chapter four focused on the process of constructing a shared frame of reference, chapter five delved into the content of the workshops by

showing what the resulting shared interpretation of the Dutch energy transition looks like. Especially problematic in the Dutch energy transition is the tendency of decisions to have little impact on the system as a whole, a phenomenon that has been called *policy resistance*. The workshops can be seen as a coordinated effort to overcome policy resistance in the Dutch energy transition. The resulting model has implications both for Alliander and its external stakeholders which are discussed in chapter five in addition to the added value that the group model building workshops had to other dominant approaches that have been used to analyze transitions. It found that group model building adds to the dominant transition approaches by mapping out the structure of the system that is responsible for policy resistance, and by finding a middle way between focusing on agency and focusing on structure, allowing for the combination of explaining policy resistance on the one hand and identifying potential solutions on the other.

This thesis showed how inter-organizational strategy workshops in the form of group model building sessions can play a role in creating a shared frame of reference between internal and external stakeholders. Such workshops provide a structured way of intensifying the stakeholder dialogue that many organizations already have, but it offers no panacea. A shared frame of reference as the result of inter-organizational workshops always concerns a certain strategic issue, and therefore, for each strategic issue where a gap between internal and external stakeholder's interpretations is to be expected, additional workshops are needed to address also those topics. These workshops may help prevent unanticipated resistance after strategic decisions are made, but require substantive efforts from all stakeholders in the form of participating in the sessions. Besides, even after these investments, cognitive conflicts may still prove to be unresolved. While the workshops decrease the odds of unanticipated resistance, there is no way of guaranteeing that all potential conflicts are surfaced. However, examples such as the Dutch smart meter rollout controversy (Hoenkamp et al., 2011) show that the costs of turning back decisions after they have been made may well exceed the costs of engaging in strategy workshops.

Dutch summary

Het succes van een organisatie hangt af van haar vermogen om tegelijkertijd in de behoeften te voorzien van haar klanten, leveranciers, werknemers, gemeenschappen, en financiers (Freeman, 1984; Parmar et al., 2010). Het nalaten van het voorzien in de behoeften van een of meer van haar stakeholders kan grote conflicten als gevolg hebben, en deze conflicten gaan vaak gepaard met veel media-aandacht. Een voorbeeld van zo'n conflict is de uitrol van de slimme meter in Nederland: gevoed door zorgen over privacy en veiligheid boden consumenten weerstand tegen de implementatie van slimme meters in hun huis en dit zorgde uiteindelijk voor een vertraging van acht jaar (Hoenkamp et al., 2011). Het doel van dit onderzoek was om beter te begrijpen waarom strategische beslissingen soms tegen onvoorziene weerstand van belanghebbenden aanlopen. Een verbeterd begrip van wat er voor nodig is om tegelijkertijd in de behoeften van verschillende belanghebbenden te voorzien helpt organisaties bij het voorkomen van het terugdraaien van strategische beslissingen nadat deze gemaakt zijn, en daarmee het voorkomen van de bijbehorende kosten.

Dit onderzoek is uitgevoerd bij een organisatie die tot doel heeft gesteld om haar vermogen om tegelijkertijd in de behoeften van verschillende belanghebbenden te voorzien te verbeteren: Alliander N.V., eigenaar van een van drie grote Nederlandse netbeheerders. Het meenemen van belanghebbenden in strategische besluitvorming is een aanzienlijke uitdaging en de controverse rond de slimme meter laat zien dat organisaties soms nalaten in de behoeften van hun stakeholders te voorzien ondanks hun ambitie om dat wel te doen. Hoofdstuk twee van dit proefschrift gebruikte interviews met werknemers van Alliander en haar belanghebbenden om te onderzoeken wat deze uitdaging zo moeilijk maakt. De uitkomsten bestonden uit de suggestie van drie op belanghebbenden georiënteerde vaardigheden die een organisatie nodig heeft om waarde te kunnen creëren voor belanghebbenden. *Ondernemerschap vaardigheden* zijn belangrijk omdat een organisatie innovatieve oplossingen dient te vinden waar de behoeften van belanghebbenden in elkaars verlengde liggen opdat het maken van een uitruil tussen de behoeften van belanghebbenden kan worden voorkomen. *Coördinatie vaardigheden* zijn belangrijk omdat de tijdsbesteding aan de ondernemende inspanningen om innovatieve oplossingen te vinden een uitruil vraagt tussen deze prioriteit en andere strategische prioriteiten die een organisatie heeft. *Legitimiteit vaardigheden* zijn belangrijk omdat sceptische belanghebbenden overtuigd dienen te worden van de opbrengst van een brede oriëntatie op belanghebbenden. Het hoofdstuk levert een bijdrage aan stakeholder theory door te laten zien onder welke voorwaarden het gelijktijdig voorzien in de behoefte van verschillende belanghebbenden instrumenteel blijkt te zijn.

Hoofdstuk drie concentreerde zich op potentiële tools uit operational research die helpen bij het creëren van waarde voor belanghebbenden. Om te identificeren welke tool het meest geschikt is voor de verschillende drempels die een organisatie tegen kan komen bij haar poging om waarde te creëren voor belanghebbenden, bood hoofdstuk drie een systematisch overzicht van studies uit operational research die zich bezig hebben gehouden met belanghebbenden, wat heeft geresulteerd in de vondst van vier verschillende tradities: *optimalisatie*, *inzichten in trade-offs*, *begrip van het probleem*, en het *managen van de grenzen*. Bij *optimalisatie* worden doelen en randvoorwaarden gedefinieerd door een reeks van wiskundige verbanden die een enkelvoudige beste oplossing trachten te geven voor een probleem. *Inzichten in trade-offs*, de grootste traditie, concentreert zich op het verschaffen van inzicht hoe het voorzien in de behoefte van de ene belanghebbende ten koste gaat van de behoeften van anderen. *Begrip van het probleem* is erop gericht het probleem waar sprake van is te structureren, waardoor het mogelijk wordt de 'taart groter te maken', naast alleen het beter 'verdelen van de taart'. Het *managen van de grenzen* concentreert zich op het betrekken van belanghebbenden, waar intensieve participatieve processen gebruikt worden om minderheidsbelanghebbenden een stem te geven. Hoofdstuk drie levert een bijdrage aan de operational research literatuur door de impliciete aannames bloot te leggen over de rol van belanghebbenden die de diverse operational research tradities maken. Door deze aannames boven water te halen stelt het hoofdstuk toekomstige operational research studies in staat om beter geïnformeerde beslissingen te maken over de rol van belanghebbenden in hun specifieke omstandigheden.

Uit hoofdstuk twee bleek dat een belangrijke barrière voor stakeholder management wordt gevormd door het fenomeen dat binnen een organisatie besluitnemers een afwijkende perceptie delen van de omgeving van hun organisatie. Uit hoofdstuk drie bleek dat *begrip van het probleem* een traditie is die de potentie heeft om organisaties te helpen een dergelijke afwijking tegen te gaan, door externe belanghebbenden te betrekken bij het systematisch structureren van specifieke problemen die een organisatie met haar belanghebbenden het hoofd dient te bieden. Om de potentie van zo'n aanpak te verkennen, beschrijft hoofdstuk vier de analyse van acht opgenomen group model building workshops met externe belanghebbenden die Alliander organiseerde. De voornaamste uitkomst was dat deze workshops zoals verwacht leidden tot meer gedeeld begrip tussen de deelnemers. De uitkomsten verschilden echter tussen de workshops, wat kon worden verklaard door twee voornaamste factoren. De eerste factor is het initiële gedeelde begrip in een groep van deelnemers: als de groep bij aanvang al een gedeeld beeld heeft is er weinig ruimte om de mate waarin er een gedeeld beeld is te vergroten. De tweede factor is de mate waarin deelnemers vaardig gebruik maken van framing strategieën. Het bleek dat het creëren

van een gedeeld beeld vraagt om een delicate balans tussen het neerzetten van frames en het relateren van frames. Hoofdstuk vier levert een bijdrage aan managerial and organizational cognition literatuur door te laten zien wat de rol is van interorganisationele strategie workshops, in ons geval in de vorm van group model building sessies, bij het tot stand brengen van een gedeeld beeld, om zodoende de afwijkende percepties binnen een organisatie tegen te gaan. Bovendien verfijnde dit hoofdstuk eerdere modellen over hoe een gedeeld beeld tot stand komt (Kaplan, 2008; Snow et al., 1986).

In de acht group model building workshops was door belanghebbenden een model opgesteld van de Nederlandse energietransitie. Waar hoofdstuk vier zich concentreerde op het proces van het creëren van een gedeeld beeld, ging hoofdstuk vijf dieper in op de inhoud van de workshops door te laten zien hoe het gedeelde beeld van de energietransitie er uiteindelijk uit kwam te zien. Een specifiek probleem van de Nederlandse energietransitie is de neiging van besluiten om weinig effect te hebben om het systeem als geheel, een fenomeen dat ook wel *beleidsweerstand* wordt genoemd. De workshops kunnen worden opgevat als een gecoördineerde poging om beleidsweerstand in de Nederlandse energietransitie het hoofd te bieden. Het opgestelde model heeft implicaties voor zowel Alliander als haar belanghebbenden en deze worden in hoofdstuk vijf behandeld, evenals de toegevoegde waarde van group model building workshops ten opzichte van de heersende manieren om transities te analyseren. De uitkomst was dat group model building waarde toevoegt door de structuur van het systeem uit te werken dat verantwoordelijk is voor beleidsweerstand, en door een balans te vinden tussen de nadruk op agency aan de ene kant en structuur aan de andere, waardoor het mogelijk wordt een combinatie te vinden van zowel het verklaren van beleidsweerstand aan de ene kant, als het identificeren van mogelijke oplossingen aan de andere.

Dit proefschrift liet zien hoe interorganisationele strategie workshops in de vorm van group model building sessies een rol kunnen spelen in het creëren van een gedeeld beeld tussen interne en externe belanghebbenden. Zulke workshops bieden een gestructureerde manier om de dialoog met belanghebbenden die veel organisaties al hebben te intensiveren, maar het is geen wondermiddel. Een gedeeld beeld zoals dat in interorganisationele workshops tot stand komt betreft altijd een enkel onderwerp en daarom zal voor elk strategisch onderwerp waar een gat wordt vermoed tussen de interpretaties van interne en externe belanghebbenden apart workshops dienen te worden georganiseerd om ook die onderwerpen te kunnen behandelen. De workshops helpen bij het voorkomen van onvoorziene weerstand nadat strategische besluiten zijn genomen, maar behoeven een aanzienlijke investering van alle belanghebbenden in de vorm van deelname aan de sessies. Daarnaast kunnen er

ondanks deze investeringen begripsverschillen blijven bestaan. De workshops helpen de kans op onvoorziene weerstand te verkleinen, maar kunnen nooit garantie bieden dat alle potentiele conflicten blootgelegd worden. Voorbeelden als de controverse rond de uitrol van de slimme meter laten echter zien dat de kosten van het terugdraaien van beslissingen de kosten van het houden van interorganisationele strategie workshops veruit kunnen ontstijgen.

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