Department of Industrial Management and Engineering

Developing Explorative and Exploitative Strategic Intentions – Towards a Practice Theory of Operations Strategy

Pekka Helkiö

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Developing Explorative and Exploitative Strategic Intentions – Towards a Practice Theory of Operations Strategy

Pekka Helkiö

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Aalto University
School of Science
Department of Industrial Engineering and Management

Supervising professor
Jan Holmström

Thesis advisor
Virpi Turkulainen

Preliminary examiners
Kimberly Bates, Ryerson University, Canada
Fabrizio Salvador, IE Business School, Spain

Opponents
Fabrizio Salvador, IE Business School, Spain
Jan Olhager, Lund University, Sweden

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Abstract

Aalto University, P.O. Box 11000, FI-00076 Aalto www.aalto.fi

Author
Pekka Helkiö

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Abstract

Developing operations capabilities proactively is valuable for the long term success of manufacturing firms. In practice, companies often find themselves stuck in addressing the most immediate problems. Research shows that pursuing both explorative and exploitative development activities is associated with sustained performance. Focusing on the context of operations strategy creation, this study describes and explains how and why the people doing the strategizing work develop explorative and exploitative operations strategic intentions.

This study is an inductive theory-building embedded-unit case study of strategy creation teams' activity in developing strategic intentions. The empirical context is an operations strategy process of a global machinery manufacturing company. In theorizing, I draw on practice theory and research on exploration and exploitation. First, I describe the practitioners, practices, and the activity of eleven strategy creation teams. Then through cross-team analysis, I develop an explanation of how and why the organizing practices of team composition and topic definition enable and constrain the teams' activity towards one of four patterns of praxis.

The study contributes primarily to operations strategy research. First, the study offers an explanation for how proactive operations capability development can be initiated and facilitated. Proactive operations capability development is central to the highest stage of Hayes and Wheelwright's (1984) model of operations contribution to competitiveness. This explanation is the first step in building the practice theory of operations strategy. Second, the study adds to the stream of research focused on understanding the messy reality of operations strategy. The introduction of the practice perspective to operations strategy provides several opportunities to future research on topics such as the role of context in operations strategy, the effects of operations strategizing tools, and particularly skilled operations strategists.

Keywords operations strategy, strategy process, practice theory, exploration, exploitation

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Tekijä
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Väitöskirjan nimi
Uutta luovien ja olemassa olevaa hyödyntävien strategisten aikomusten kehitys - kohti tuotantostrategian käytäntöteoriaa

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Tiivistelmä

Yrityksen pitkän aikavälin menestyksen näkökulmasta tuotannon kyvykkyyksiä kannattaa kehittää ennakoivasti. Käytännössä kuitenkin monissa yrityksissä aika kuluu kaikkein kiireellisimpien ongelmien ratkaisuun. Aiemmat tutkimukset osoittavat, että pitkällä aikavälillä kestävä kilpailukyky löytyy yhdistelmästä uutta etsivää kehitystä ja olemassa olevaa hyödyntävää sekä parantavaa kehitystä. Tämä tutkimus keskittyy tuotantostrategian muodostustyöhön. Tutkimus kuvaa ja selittää miten ja miksi strategiatyöhön osallistuvat ihmiset kehittävät uutta etsiviä ja vanhaa hyödyntäviä tuotantostrategisia aikomuksia.

Tämä on induktiivinen tapaustutkimus tuotantostrategisten aikomusten kehittämisestä globaalisti toimivassa valmistavan teollisuuden yrityksessä. Taustateorioina hyödynnän käytäntöteoriaa ja tutkimusta uuden etsimisestä (engl. exploration) ja vanhan hyödyntämisestä (engl. exploitation). Empiirisessä osassa kuvaan ensin toimijat, käytännöt, sekä 11:sta strategianmuodostusryhmän toiminnan. Seuraavaksi kehitän vertailevan analyysin keinoin selityksen siitä miten ja miksi ryhmienmuodostus ja aiheenmäärittely organisointikäytäntöinä mahdollistavat ja rajoittavat ryhmän toimintaa kohti yhtä neljästä toimintamallista.

Tämä väitöskirja edistää ennen kaikkea tuotantostrategian tutkimusta. Ensinnäkin, työ tarjoaa selityksen siihen kuinka ennakoivaa tuotantokyvykkyyksien kehitystä voidaan käynnistää. Toiseksi, väitöskirja on osa laajempaa tutkimusten sarjaa, joka pyrkii ymmärtämään millaista tuotantostrategiatyö on todellisuudessa. Tämä on myös ensimmäinen akateeminen kuvaus tämän tyyppisestä tuotantostrategiaprosessista, johon osallistuu laaja joukko yrityksen henkilöstöä. Lisäksi, käytäntöteorian tuominen tuotantostrategiakeskusteluun avaa uusia mahdollisuuksia tutkia aiheita kuten kontekstin vaikutus tuotantostrategiaan, tuotantostrategian työkalujen vaikutukset, sekä erityisen taitavat tuotantostrategian osaajat.

Avainsanat tuotantostrategia, strategiaprosessi, käytäntöteoria

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Turku, November 2013
Pekka Helkiö

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Definitions

Concept	Definition	Discussion on page
Operations strategy	Operations strategy is a stream of activities in managing and developing organization's value delivering resources and capabilities	12
Operations strategy creation	Operations strategy creation activity is a finite period of action and interaction that develops strategic intentions for developing organization's value delivering resources and capabilities	15
Strategic intention	Strategic intention consists of statements indicating a future goal to be attained and action plans for reaching for the goal	16
Exploitation	Organization level adaptation by improving existing capabilities and by competing with existing market-offering combinations	19
Exploration	Organization level adaptation by developing new capabilities and by competing by introducing new offerings or entering new markets.	19
Local search	Knowledge gathering actions and interactions that remains within organizational boundaries	20
Boundary-spanning search	Knowledge gathering actions and interactions that cross organizational or industry boundaries	20
Explorative strategic intention	Strategic intention to operations capability development that aims to capture new business and/or gain radical performance improvements	27
Exploitative strategic intention	Strategic intention to operations capability development that aims to support current business and/or gain incremental performance improvements	27
Practice	Social, collective shared type of understanding and behaving	30
Practitioner	A person who engages in practice	30
Praxis	The actual situated activity when practitioners engage in practices	30

1. Introduction

1.1. Developing strategic intentions to develop operations capabilities

People in organizations continuously try to develop and improve company operations in order to improve the company's future success in business. Yet, herein lies a fundamental challenge in deciding how the limited development resources should be used. In general, there is a need for both development activities that bring performance improvements in the short term and development aiming for improving competitiveness in the longer term. Still, many companies find themselves stuck with performing only short term improvements and solving the most acute problems. However, some firms, such as Toyota in the 1980s, Nokia in early 2000s, and Dell succeeded in developing their operations into a cornerstone of their competitiveness. At a practical level this is a challenge of ensuring that both short term performance and longer term competitiveness receive due attention in initiating development efforts. From a societal perspective, the existence of manufacturers that have the ability to identify and pursue new business opportunities has been identified as one of the keys to securing the future of the welfare state in countries such as Finland (Eloranta, Ranta, Salmi, & Ylä-anttila, 2010).

The goal and means of directing the development of operations capabilities towards current business goals are established in operations strategy research. Originally, Skinner (1969, 1974) argued that manufacturing companies should focus their improvement efforts towards objectives that link directly to the business strategy. At that time manufacturing was considered as a largely unimportant technical matter unless causing problems (Skinner, 1969). Today, practitioners have access to tools and frameworks that aid in aligning operations with the current business strategy (Acur & Bititci, 2004; Hayes & Wheelwright, 1979; Hill & Brown, 2007; Hill, 1985; Platts & Gregory, 1990) and improvement methodologies for enhancing performance towards higher levels of excellence (e.g., Schroeder, Linderman, Liedtke, & Choo, 2008; Shah &

Ward, 2007). These tools are effective in aligning operations with business strategy.

Operations strategy theorizing also includes the idea of an operations organization that initiates operations capability development for capturing both current and future business opportunities. First introduced in their four-stage model, Hayes and Wheelwright (1984) argued that the strategic role of operations varies from a liability to a proactive participant in business strategy making. They argued that some successful firms went even beyond aligning with business strategy as advised by Skinner (1969, 1974). In subsequent work, scholars have begun to identify the enablers of a proactive stance to development, such as organizational culture (Bates, Amundson, Schroeder, & Morris, 1995), a core competency oriented strategy process (Swamidass, Darlow, & Baines, 2001), and knowledge of market threats and opportunities (Paiva, Roth, & Fensterseifer, 2008). However, the questions of how to guide the development of capabilities beyond supporting current business strategy are left open in the original model (Hayes & Pisano, 1994), and later research as well. What the four-stage model provides is a vision and a rough metric for measuring progress (Hayes & Pisano, 1994).

The research on exploration and exploitation (e.g., Duncan, 1976; March, 1991; O'Reilly & Tushman, 2008; Raisch & Birkinshaw, 2008) helps to conceptualize the distinction between Hayes and Wheelwright's (1984) idea of proactive operations development and Skinner's (1969, 1974) idea of alignment with business strategy. For an organization to survive, the exploitation of known certainties and performing adjustments must be combined with exploration of new possibilities (March, 1991). This theoretical argument has received support from empirical research at organization level analysis (He & Wong, 2004; Lubatkin, Simsek, Ling, & Veiga, 2006; Uotila, Maula, Keil, & Zahra, 2009). However, the link between behavior and outcomes in exploration and exploitation is not clear (Farjoun, 2010), and furthermore, the actions vary depending on context and organizational level (e.g., Raisch and Birkinshaw, 2008; Andriopoulos and Lewis, 2009). Organization theorizing offers solutions, such as structural separation, for managing the tension between exploration and exploitation to ensure that both are pursued (Duncan, 1976; Gibson & Birkinshaw, 2004; Lubatkin et al., 2006; Smith & Tushman, 2005; Tushman & O'Reilly, 1996). However, these organizational designs are firm level solutions and do not address the operations strategy context directly.

In this study I focus on how explorative and exploitative strategic intentions to develop operations capabilities are developed in an operations strategy creation activity. Here the strategic intentions are a combination of

goal statements (e.g. “we will improve delivery speed by X%”) and action plans (e.g. “we will do projects X and Y this year and project Z the following year”). I approach operations strategy with practice perspective and focus on what people do (e.g., Schatzki et al., 2000; Whittington, 2006; Feldman and Orlikowski, 2011). I analyze how the development of strategic intentions is enabled and constrained by the practices of the teams and the organizers of an operations strategy creation activity in a global machinery manufacturing company. My analysis suggests that the organizing practices of topic definition and team composition have influential effects on the operations strategy creation activity. I summarize these in four patterns of developing explorative and exploitative strategic intentions.

1.2. Assumptions, ontology, and the practice perspective

In general, operations strategy research is based on organizational theorizing that assumes that organizational adaptation is possible. Research on Skinnerian alignment (e.g., Anand & Ward, 2004; Ward, Bickford, & Leong, 1996; Ward & Duray, 2000) has foundations in contingency theory which deals with how organizations pursue fit with their environment (Lawrence & Lorsch, 1967; Thompson, 1967). Operations strategy thinking, drawing on the resource-based view and dynamic capabilities perspectives (Anand, Ward, Tatikonda, & Schilling, 2009; Hayes, Pisano, Upton, & Wheelwright, 2005; Ketokivi & Schroeder, 2004a; Paiva et al., 2008), assumes that organizations can acquire superior resources and even develop capabilities to adjust capabilities to respond to changes in external environment (Eisenhardt & Martin, 2000; Teece, Pisano, & Shuen, 1997; Teece, 2007; Winter, 2003). In contrast, in the organization ecology perspective adaptation is inefficient due to organizational inertia slowing down change and therefore firms trying to adapt do not generally survive in the process of selection where the most fit survive (Hannan & Freeman, 1984). Empirical research has been unable to favor either of the perspectives over the other (O’Reilly & Tushman, 2008). Underlying the interest in the actions in strategy creation, I base this study on the idea that people in the organization can influence the future success and performance of the organization.

Assumption 1: Organizational adaptation is possible.

While acknowledging Mintzberg’s (1978) note on how realized strategy contains an unintended, emergent element, I assume that operations strategies do influence the direction of operations capability development. Moreover, the cognitive aspect enhances the significance of strategy

creation. A strategy process offers an arena for reflection and consideration of changes that the day-to-day management does not provide (Hendry & Seidl, 2003). Given the typically short term time orientation of operations management (Lawrence & Lorsch, 1967) unattended opportunities and threats are likely to remain so until the next strategy process.

Assumption 2: Strategic intentions influence the direction of operations capability development.

I study operations strategy creation through the practice perspective (e.g., Schatzki et al., 2000; Whittington, 2006; Feldman and Orlikowski, 2011). This means that I view operations strategy as something that people do rather than a process that firms have. The practice perspective enables me to continue the stream of research into how operations strategies are made in messy, contextual reality (e.g., Swamidass et al., 2001; Barnes, 2002; Rytter et al., 2007; Kiridena et al., 2009). Furthermore, this approach supports me in studying the lower levels of organization, which has been identified as influential but not very well understood in both operations strategy in particular (Kiridena et al., 2009; Rytter et al., 2007) and strategy research in general (e.g. Wooldridge & Floyd, 1990; Wooldridge, Schmid, & Floyd, 2008). Most importantly, the practice perspective offers concepts to answer the questions of *how* and *why* people create operations strategies.

The answers of this study to the question "why" depends on an assumption about the motivations of participants in strategy creation. Practices enable and constrain social action in context (Giddens, 1984). As actors have agency (the possibility to do otherwise), we must have some understanding of their motivations in order to understand behavior (Giddens, 1984). In this study the assumption is that people are motivated to complete the tasks given to them. I make this assumption during the analysis process, but include it also here in the introduction section.

Assumption 3: Participants of the strategy creation activity seek to complete their various organizational tasks

Practice theory builds on an ontology where social reality is constructed over and over again through action and interactions that draws on social practices as building blocks of sorts (Langley, 2010). Practice theorizing gives primacy to practice over theory, which means that people do what they do not because of some latent rule or law described by a theory but simply because that is what they do (Bloor, 2000). What people do is influenced by, and at the same time influences, who and where they are (Barnes, 2000). From this ontological perspective, scientific progress can be seen as "increasingly insightful interpretations or representations of

strategy viewed as a social practice" (Langley, 2010: 95). The corresponding utility for practitioners is in increased reflexivity and clarity in thinking and acting in their own context (Langley, 2010). I subscribe to this practice ontology in my thinking.

As the practice ontology is different from the positivist ontology often displayed in operations management research, I adopt a pragmatic position. Although drawing on practice ontology, I find this study also compatible with positivist research. Social action displays some regularity because it draws on practices which are sets of behaviors that are shared by the collective (Turner, 2000). Understanding this regularity allows researchers to say some things about why some actions are more likely than others. Taking this thought further, given sufficient stability and regularity positivist research programs can produce understanding that is and remains accurate enough for a reasonable time period. Leaning on this stability, I analytically generalize (Yin, 2003) from the empirical findings of this study to theory that can be utilized to understand strategizing in different firms at different times. Furthermore, it is in this sense that the questions of this study integrate with prior research. For me, the truth claims of positivist research do not represent approximations of absolute truths but rather useful and stable enough regularities in the social world.

As a final ontological comment I want to clarify that practice theory is about the social world. The natural world and its phenomena, such as gravity or electromagnetic radiation, do seem to follow universal laws (with the representation construed by the social activity of science). Practice theorists do, however, point out that we typically engage the natural world in a collective manner and thus the natural and social world become mixed (Bloor, 2000). To take Bloor's example, a coin is a piece of metal which carries a social status that makes it a currency. Should it somehow lose the social status as a currency, it would no longer be a coin but still remain a metallic object. Similarly, operations management interacts with both natural and social worlds. A warehouse or a machine is subject to the laws of physics which give rise to questions about optimizing of inventory picking time or scheduling bottle-neck machines. But there are people involved as well, which brings the social world into the picture. Operations strategizing activities such as defining priorities or communicating strategies are thoroughly social.

1.3. Research objectives and research question

This study has both explanatory and descriptive objectives. The explanatory objective is to understand how operations strategy creation activity

develops exploitative adjustments of alignment with business strategy as advised by Skinner (1969, 1974) and explorative elements that initiate proactive operations capability development as suggested by Hayes and Wheelwright (1984). The descriptive objective of the study is to contribute to the on-going effort to better understand the reality of operations strategy creation (e.g., Swamidass et al., 2001; Barnes, 2002; Rytter et al., 2007; Kiridena et al., 2009).

In the study I develop a practice perspective to the development of explorative and exploitative strategic intentions to develop operations capabilities. I begin with prior theorizing on exploration and exploitation that associates exploration of possibilities with boundary-spanning search and exploitation of old certainties with local search (Katila & Ahuja, 2002; March, 1991; Stuart & Podolny, 1996). Practice theory helps to answer the question *how*. However as practice theory understands social activity as enactment of collective social practices that both make action possible and limit it (Giddens, 1984), I also answer a question "why" associated with the question "how". The research question is:

> **Research question:** How and why are explorative and exploitative strategic intentions to develop operations capabilities developed in an operations strategy creation activity?

As suggested in prior methodology discussions (Barratt, Choi, & Li, 2011; Eisenhardt, 1989) I chose an inductive theory-building research design because there are only a few studies describing operations strategy in practice (e.g., Swamidass et al., 2001; Barnes, 2002; Rytter et al., 2007; Kiridena et al., 2009), and none addressing, specifically, practice theoretical phenomena. I followed an embedded single case study design (Yin, 2003) where I studied eleven strategy creation teams (the embedded unit) and their interactions within a global machinery manufacturing company during 2010 and 2011. Analyzing several teams within one organizational context allowed me to focus on the different ways the practitioners created strategy. Put differently, analyzing a single company context aided in bracketing the institutions in the analysis of how and why people act (see: Giddens, 1984). Furthermore, studying eleven strategy creation teams enabled me to make cross-team comparisons and to understand the differences behind the development of explorative and exploitative strategic intentions.

1.4. Main findings and contributions

The main result of this study is a practice-based theory of the development of explorative and exploitative strategic intentions. I propose that team composition and topic definition practices jointly determine the tension between a strategy creation team's strategizing task and their orientation in the daily organizational task. This tension and the knowledge requirements of the tasks together with the existing knowledge determine the need to engage in search activities. I offer four patterns of how these effects unfold in actual strategy creation work. Last, I wish to highlight the analysis leading to the conclusions as a descriptive result of this study.

To research on the proactive operations capability development (Bates et al., 1995; Hayes & Wheelwright, 1984; Paiva et al., 2008; Swamidass et al., 2001), this study offers explanation for how and why the some of the strategy creation teams developed strategic intentions that include explorative elements. In contrast to prior research, this study addresses specific management activities. Linking the theorizing on exploration and exploitation (e.g., March, 1991) with the question of proactive strategic capability development is an integrative contribution of this study.

The study contributions to operations strategy research in general by offering a practice-based account of operations strategy creation. This continues the work of prior studies capturing the reality of operations strategy (e.g., Swamidass et al., 2001; Barnes, 2002; Rytter et al., 2007; Kiridena et al., 2009). Further, the study identifies a number of new research opportunities that stem from adopting the practice perspective to operations strategy. Most importantly, practice theory offers a new perspective for understanding the role of context in operations strategy theorizing. Research on operations strategy tools and frameworks could be reinvigorated by applying the practice perspective.

This study also makes contributions to the research on exploration and exploitation. Describing how a structurally ambidextrous firm draws on contextual ambidexterity in strategy creation adds support for the suggestion that firms can draw on multiple forms of ambidexterity simultaneously (Kauppila, 2010). As a second contribution, the study identifies the effects of team composition and task definition on the exploration-exploitation in a strategy creation activity.

The main contribution to the practitioner audience is to highlight the enabling and constraining effects of organizing practices in operations strategy creation. As Giddens (1984) suggests, social science makes significant practical contributions by highlighting the unacknowledged conditions of action and unintended consequences. Understanding the enabling and constraining influences of organizing practices helps to

manage strategy creation activity whether the firm seeks to balance or to emphasize either exploration or exploitation.

2. Theoretical background

I locate this study at an intersection of three relatively separate bodies of knowledge. Figure 1 illustrates the linkages I make in the study. The primary objective is to advance knowledge on operations strategy creation and on the proactive operations capability development. The research on exploration and exploitation offers an empirically supported theory of performance which provides the basis for analyzing the strategic intentions developed in the case. The role of the practice perspective is to sensitize and provide theoretical vocabulary for answering the questions how and why the participants in the operations strategy creation developed the kinds of strategic intentions that they did. Given prior separation, the introduction of the practice perspective and exploration and exploitation perspective to the analysis of operations strategy creation is a part of the contribution that this study makes.

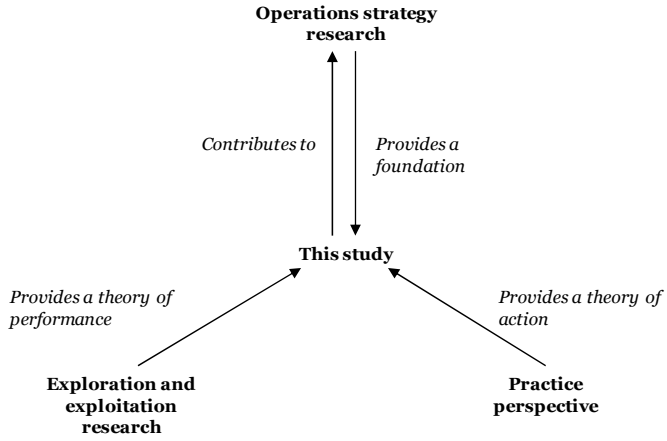

Figure 1 Locating this study into the theoretical background

2.1. Operations strategy

2.1.1. The theoretical foundations of operations strategy

In the earliest thinking on operations strategy, Skinner (1969, 1974) viewed manufacturing strategy as an orientation towards business goals that is manifested in the design of the production systems. In these prescriptive articles Skinner argued that managers should cease to pursue a "good manufacturing operation" that was some mix of cost and quality. Instead, they should focus on improving their performance on dimensions that were important in their business strategy (Skinner, 1969). The notion of alignment underlies streams of operations research dedicated to understanding the linkages between operations and performance (Anderson, Cleveland, & Schroeder, 1989; Vickery, Droge, & Markland, 1993), the need for focus and trade offs (Boyer & Lewis, 2002; Ferdows & De Meyer, 1990), contingency approaches to studying both internal and external fit (Anand & Ward, 2004; Ward et al., 1996; Ward & Duray, 2000), and performance frontiers (Lapré & Scudder, 2004; Rosenzweig & Easton, 2010; Rosenzweig & Roth, 2004; Schmenner & Swink, 1998). The implicit definition is that operations strategy exists in the alignment or coherence of operations decisions that yields performance in dimensions desirable to the whole firm.

A more competition oriented perspective to operations strategy was conceptualized by Hayes and Wheelwright (1984). In research based on Skinner's notions, the questions of competition are largely external to operations as they are absorbed by concepts such as business strategy. Hayes and Wheelwright (1984) turn our attention to the concept of operations-based competitive advantage and to attacking and defending through operations and participation in business strategy making. Similar to Mintzberg (1978), Hayes and Wheelwright defined operations strategy as a pattern of actions. Subsequent research has focused more on theory from strategic management research, such as the resource-based view (Barney, 2001; Peteraf, 1993; Wernerfelt, 1984) and dynamic capabilities (Eisenhardt & Martin, 2000; Teece et al., 1997; Teece, 2007; Winter, 2003). These operations strategy studies have addressed a wide range of topics, such as continuous improvement (Anand et al., 2009), manufacturing practices (Ketokivi & Schroeder, 2004a), organizational culture (Bates et al., 1995), learning (Schroeder, Bates, & Junttila, 2002) and knowledge (Paiva et al., 2008). The common thread here is that the management and development of operations can yield competitive advantage and thus contribute to business strategy in a proactive role in addition to the support role described by Skinner.

The third perspective views operations strategy as the application of various manufacturing practices. Originally coined by Hayes and Wheelwright (1984), World Class Manufacturing caught attention in the early 1990s and was developed into a distinct stream of operations strategy research that focused on bundles of innovative practices such as just-in-time (JIT), total quality management (TQM), six sigma, and lean, as well as on new technologies, such as flexible manufacturing systems and enterprise information systems. At the time, these practices differed significantly from conventional thinking and companies implemented them in the hope of large performance gains. Today these practices are more widespread (Schroeder et al., 2008). Even as a critic of "best practices", Skinner (1996) recognizes their positive performance impact and value in keeping up with the competitors that are adopting the same practices.

Together these three classic perspectives describe what operations strategy is (Voss, 1995, 2005). The defining characteristics of operations strategy are the management and development of operations capabilities and resources and an orientation towards the company as a whole engaged in competition. These elements are readily visible in a various definitions in frequently cited operations strategy texts (Table 1).

Table 1 Definitions of operations strategy

Authors	Definitions
Hayes et al. (2005: 33)	"An operations strategy is a set of goals, policies, and self-imposed restrictions that together describe how the organization proposes to direct and develop all the resources invested in operations as to best fulfill (and possibly redefine) its missions."
Slack and Lewis (2011: 22)	"… the total pattern of decisions that shape the long-term capabilities of any type of operation and their contribution to overall strategy, through the reconciliation of market requirements with operations resources."
Skinner (1969: 138)	"The notion is simple enough – namely, that a company's competitive strategy at a given time places particular demands on its manufacturing function, and, conversely, that the company's manufacturing posture and operations should be specifically designed to fulfill the task demanded by strategic plans."
Anderson, Cleveland, Schroeder (1989: 137)	"It is generally agreed that strategy refers to a long-range thrust or direction for an organization designed to give competitive advantage. An operations strategy is then a strategy for the operations function of an organization which is a part of the business strategy or strongly integrated with the business and corporate strategies."

In this study I define operations strategy as a stream of activity. I adopt the practice perspective to highlight the actions and interactions of people in organization (e.g., Jarzabkowski, 2005). The stream of activity encompasses both strategic planning and a pattern of operations decisions. Although not explicit, my definition is aligned with Skinner's (1969, 1974) idea that operations strategy involves matters that are influential to

business success. With the expression "managing and developing resources and capabilities" I generally imply a level of aggregation where effects on business are significant, such as transforming outbound logistics capabilities to better serve the customer. However, it is hard to think of an operations activity that has no impact on business. For instance, a production planner's daily decisions influence whether customers get their orders on time or not. Similarly, an assembly line employees' actions determine the quality (or incur the costs of rework) of the product and ultimately customer experience. Keeping with the definitions in Table 1, I limit operations strategy to the actions of managers. My definition is:

> Operations strategy is a stream of activities in managing and developing organization's value delivering resources and capabilities.

2.1.2. **Operations strategy process**

Research on the process aspects of operations strategy is scarce in comparison to the numerous studies on the content of operations strategy (Boyer, Swink, & Rosenzweig, 2005; Dangayach & Deshmukh, 2001; Leong, Snyder, & Ward, 1990). Scholars have developed frameworks of planning operations strategies (Acur & Bititci, 2004; Hayes & Wheelwright, 1979; Hill & Brown, 2007; Hill, 1985; Platts & Gregory, 1990), maturity models for operations strategy (Barnes & Rowbotham, 2004; Hayes & Wheelwright, 1984; Swamidass et al., 2001), and identified characteristics of high performing operations strategy planning processes (Brown, Squire, & Lewis, 2010; Papke-Shields, Malhotra, & Grover, 2002, 2006). Often designed as action research elements to apply to planning frameworks, a number of case studies have produced descriptions of operations strategy creation (Barnes, 2002; Bennigson, 1996; Menda & Dilts, 1997; Menda, 2004; Mills, Neely, Platts, & Gregory, 1998; Rytter et al., 2007). These authors conclude that we still know fairly little about the process aspects of operations strategy (Barnes, 2002; Kiridena et al., 2009; Rytter et al., 2007).

The efforts to develop a more realistic account of operations strategy process have been focused largely on identifying alternatives to the rational top-down planning model. An in-depth case study of a UK manufacturer by Swamidass et al. (2001) describes how manufacturing strategy evolved from 1989 to 1997. An initial top management planning decision to relocate the plant in 1989 was followed by a manufacturing director's initiative to seize an opportunity for a long term contract in a new business in 1991. From 1991 to 1997 the manufacturing strategy was mainly characterized by a manufacturing manager's efforts to employ just-in-time practices. Swamidass et al. (2001) conclude that the strategic role of manufacturing

varies over time and that Skinnerian top-down planning is not the only alternative. Subsequent case studies have similar findings that deliberate top-down planning takes place in some cases (Barnes, 2002; Kiridena et al., 2009; Rytter et al., 2007). However, operations strategy as a stream of activity often includes or even fully consists of emergent elements, such as ad-hoc decisions to adjust the plans, to initiate new improvement programs, and problem solving (Barnes, 2002; Kiridena et al., 2009; Rytter et al., 2007).

The second focus in increasing realism is the influence of the context on operations strategy as a stream of activity. The multiple-case study by Barnes (2002) covers six manufacturers whose manufacturing strategy varied from most deliberate top-down planning to highly emergent, political ad-hoc improvement decision making. Based on the case study Barnes (2002) argues that the translation from business strategy to manufacturing strategy and further to actions is a process of managerial interpretation that is influenced by cultural, political, and individual factors in the firm context. The action research of Rytter et al. (2007) describes an initiation, implementation, and outcomes of lean manufacturing in a Danish medical equipment company from 1994 to 2003. Initially a significant loss of market share due to poor performance had been addressed by a new CEO with various changes to the operations. Next, the researchers and company management initiated an operations strategy intervention project, which, through a series of discussions and larger seminars, established opportunities in moving to lean manufacturing. As the main result of the study the actual implementation process is described as complex and chaotic due to events such as actors changing their minds, actors speaking their mind very late to the process, new actors entering and old leaving, and external changes during the process resulting in new problems and offering new alternatives (Rytter et al., 2007).

As the most recent contribution to this stream, Kiridena et al. (2009) conducted a case study of nine Austrian metal and machinery manufacturers to understand how the patterns of operations strategy decision making are influenced by the context. As the main result, they describe three modes of initiation and several paths leading to realization of the operations strategy initiative. Furthermore, they find that the progression of an operations strategy initiative is largely dependent on the mode of finding and the nature of the initiative. As the first pattern, Kiridena et al. (2009) describe initiatives that are forced by top management and subsequently meet little resistance. These included initiatives such “change production approach” or “introduce a new safety system”. In the second pattern, opportunistic initiation followed events

such as technological advancements or shifts in customer preferences. Involving several levels of the organization and both formal and informal interactions to develop, these initiatives included major investments, improvement programs, and changes in operational policies. Finally, the third pattern consisted of small-scale investments to support growth as well as problem solving and incremental improvement initiatives. These were typically initiated at department manager or supervisor level. In conclusion, the findings of Kiridena et al. (2009) describe operations strategy as an activity composed of different kinds of initiatives originating from both the top and lower levels of the organization.

In summary, understanding operations strategy as a stream of activity is well aligned with what we know about the process of forming operations strategy. Developed already in the early operations strategy process research, normative planning frameworks can be useful in practice (e.g., Menda & Dilts, 1997). While firms do engage in top-down operations strategy planning, it is only one of the approaches found in reality (Barnes, 2002; Swamidass et al., 2001). The recent studies of Rytter et al. (2007) and Kiridena et al. (2009) demonstrate that operations strategy as a stream of activity also takes place in the lower levels of organizations and varies depending on the nature of the operations strategy initiatives.

2.1.3. **Operations strategy creation as an activity**

Turning the focus to strategy creation activities is a next step in the research on the reality of operations strategy as an activity (e.g., Barnes, 2002; Kiridena et al., 2009; Rytter et al., 2007; Swamidass et al., 2001). Strategy creation is essentially strategic planning, which includes but is not limited to top-down strategic planning. Because the objective of previous research has been to identify alternatives to top-down planning, the strategy creation aspects have been noted but not attended to in great detail. As the closest example, the study of Kiridena et al. (2009) identifies and discusses top-down forcing as one of the modes of initiating initiatives that become part of the stream of operations strategy activity. However, their analytical focus is in classifying different modes of initiation in order to proceed to developing links to subsequent patterns. Although briefly touched upon in existing research, we know little about the actuality of operations strategy creation activities in practice.

Operations strategy creation is a relevant activity that some companies engage in as part of their stream of operations strategy activity. Indeed, the critics of extensive strategic planning note that strategic intentions are not always realized as intended (e.g., Mintzberg, 1978, 1994). A counter argument is that intentions, even if ultimately wrong, initiate action

(Burgelman, 1983a; Weick, 1979). Although the initiated action may change or even fail, strategic planning decisions leave behind actions that were not initiated. Given this consequential nature, strategy creation is a relevant activity constituting a part of a firm's operations strategy activity. Building on the definition of operations strategy, I use the following definition:

> Operations strategy creation activity is a finite period of action and interaction that develops strategic intentions for developing organization's value delivering resources and capabilities.

Not all operations strategy creation processes are equally effective. The studies of Papke-Shields et al. (2002, 2006) suggest that planning processes with both "rational" and "adaptive" elements are associated with improved alignment between business and manufacturing strategy and improved goal attainment. The rational elements involve characteristics such as the extent of formal structuring, strong links with budgeting, and the extent to which all possible alternatives are identified and considered. The adaptive elements emphasize the magnitude of resources committed to planning and the variety of individuals participating (Papke-Shields et al., 2002, 2006). The study of Ketokivi and Castañer (2004) suggests that the broad participation of individuals from multiple levels of an organization in strategic planning combined with communication of strategy reduces position bias and thus serves as an integrative mechanism. Finally, the study of Brown, Squire, and Lewis (2010) found that firms where operations personnel was actively involved in strategic decisions had higher quality, higher inventory turns, longer supplier contracts, and faster new product development processes than strategically less inclusive firms.

The more defined focus of this study is the development of strategic intentions in an operations strategy activity. First, although "strategic intention" is interchangeable with "strategy" in ordinary language, the following definition brings more clarity. Strategic intentions are anchored in time and place whereas others view operations strategy as a stream of activity (e.g., Barnes, 2002; Mintzberg, 1978). Second, a focus on strategic intentions provides access to the idea of proactive development of operation capabilities (Hayes & Wheelwright, 1984) in the sense that proactive implies acting intentionally on an idea of future business. Last, strategic intentions as formal strategies do shape the activities of the organization (Burgelman, 1983b). For this study I define strategic intentions in the following way:

> Strategic intention consists of statements indicating a future goal to be attained and action plans for reaching the goal.

2.1.4. **Proactive operations capability development**

I find the quote from Wheelwright (1984) to fit here:

> "There are three important aspects that can be summarized at this point. First, a manufacturing strategy is determined by the pattern of decisions actually made (that is, by what managers do), not by what the business says its manufacturing strategy is. Second, the more consistent that pattern is in supporting the desired competitive advantage (business strategy), the more effective the manufacturing strategy. Third, although individual decisions are usually made in support of specific products, markets or technologies, **over the long term the major function of a manufacturing strategy is to assemble and develop the set of manufacturing capabilities that will allow the business to pursue its current (and future) strategy**." (Wheelwright, 1984: 85-86; emphasis added)

The basic argument is that although a firm is well-advised to follow the Skinnerian ideas of fit and focus in its manufacturing strategy, it is possible to do more for longer term competiveness. Hayes and Wheelwright (1984: 395) found the earlier writings on the manufacturing's contribution to a firm's success to be useful for raising awareness. However, drawing on their experience with companies they propose a more complex model of the role of manufacturing function in a firm's competitive strategy. Table 2 describes this four-stage model of how firms tend to improve the manufacturing's competitive contribution. Due to inertia in large organizations, Hayes and Wheelwright (1984) argue that firms move one step at time as they evolve. While the internally supportive stage (Stage 3), which is based on Skinner's (1969, 1974) writings, is already progressive, the externally supportive stage (Stage 4) is where Hayes and Wheelwright locate most of the world class manufacturing firms.

Table 2 Stages in the Evolution of Manufacturing's Strategic Role (Hayes and Wheelwright, 1984: 396)

Stage 1 – Minimize Manufacturing's Negative Potential: "Internally Neutral"
External experts are used in making decisions about strategic manufacturing issues
Internal Management control systems are the primary means for monitoring manufacturing performance
Manufacturing is kept flexible and reactive
Stage 2- Achieve Parity (Neutrality) with Competitors: "Externally Neutral"
"Industry Practice" is followed
The planning horizon for manufacturing investment decisions is extended to incorporate a single business cycle
Capital investment is regarded as the primary means for catching up to competition or achieving a competitive edge
Stage 3 – Provide Credible Support to the Business Strategy: "Internally Supportive"
Manufacturing investments are screened for consistency with the business strategy
Changes in business strategy are automatically translated into manufacturing implications
Longer-term manufacturing developments and trends are systematically addressed
Stage 4 – Pursue a Manufacturing-Based Competitive Advantage: "Externally Supportive"
Efforts are made to anticipate the potential of new manufacturing practices and technologies
Manufacturing is centrally involved in major marketing and engineering decisions
Long-range programs are pursued in order to acquire capabilities in advance of needs

With regard to externally supportive strategic role, Hayes and Wheelwright mean that manufacturing "is seen as a means for attaining a significant advantage in the firm's external environment" (Hayes & Wheelwright, 1984: 399). They suggest that there are two types of firms where the strategic role of manufacturing is externally supportive. The first is one where manufacturing is the primary competitive advantage and other functions have secondary role. They offer United Parcel Service (UPS) as one example of such firms. In the second type of firm all functions have an externally supportive role. Hayes and Wheelwright (1984) note that movement from the internally supportive to externally supportive role is a difficult transition precisely because it requires that both manufacturing to change how it views itself and that the rest of the organization change how it views manufacturing. In the externally supportive stage, the company must be able to not only align manufacturing investments and decisions with the strategy (internally supportive) but also address infrastructural issues such as policies and organization structures (Hayes & Wheelwright, 1984).

Some of the subsequent studies address the four-stage model directly. Bates et al. (1995) found that the proactive externally supportive role is associated with organizational culture characterized by low emphasis on hierarchy, high use of teams and groups, and high levels of loyalty and shared philosophy. Hum and Leow (1996) used the model as a strategic manufacturing audit tool and reported their results to be used as a benchmark. However, their sample of 55 Singaporean electronics firms contained no responses at the externally supportive stage. Utilizing case data, Swamidass et al. (2001) propose that the externally supportive role is

associated with core-competency oriented manufacturing strategy development. Last, testing the model with a survey of 460 UK managers, Barnes and Rowbotham (2004) found that about half of the responses could be fitted to the logic of the four-stage model. In discussing the findings they express doubts towards the model, their own questionnaire items, and responding manager's competence in assessing the strategic role of operations. However, the basic argument behind the four-stage model remains unchanged. In their commentary of the state of manufacturing strategy Hayes and Pisano (1996) note that although new approaches such as JIT, TQM, and lean bring great improvements, they still need to be applied as a part of broader manufacturing strategy that develops operating capabilities. In their more recent book addressing similar issues as the original "Restoring our competitive edge" (Hayes & Wheelwright, 1984), Hayes et al., (2005) make no significant changes to the idea of a proactive, externally supportive operations function.

A more specific subsequent stream of research has focused on the idea of operations executives participating in business strategy making. Studying a sample of 35 U.S. manufacturers Swamidass and Newell (1987) found that the role manufacturing managers in strategic decision making is associated with firm's economic performance. More recent exploratory research associates manufacturing's participation in strategy creation with high firm performance (Brown, Squire, & Blackmon, 2007) and operations performance (Brown et al., 2010).

Last, a recent study by Paiva et al. (2008) discusses operations strategy and operations capability development by integrating knowledge and resource-based perspectives. For them, operations strategy formulation is an alignment of resources that include information, knowledge, and company functions. The dependent variable in their study is operations functions' orientation to create new inimitable value. They find that this orientation is higher in firms where the operations function is cross-functionally oriented and who possess knowledge that is external to the company. Further, they found that external knowledge is associated with the use of both internal and external information sources and that cross-functional orientation is the use of internal sources of information. For operations' proactive role in strategic decision making, Paiva et al. (2008) suggest management activities, such as participatory strategy process, that build up knowledge and develop cross-functional orientation in the firm.

A better understanding of operations strategy creation holds a promise of understanding the proactive development of operation capabilities, as suggested by Hayes and Wheelwright (1984). Research agrees that the antecedents lie in the organizational issues rather than physical operations

design. Indeed, the findings of Bates et al. (1995) about the link between proactive externally supportive operations and clan-based organizational culture supports this. Similarly, the analysis of Paiva et al. (2008) link proactive role with knowledge and cross-functional orientation. Research also agrees that strategy creation as a management activity plays a significant role here. Next, I will discuss theorizing on exploration and exploitation which establishes the link between behavior and long term performance outcomes.

2.2. Exploration and exploitation in operations strategy creation

How are the strategic intentions to develop operations capabilities linked to the future success of the firm? In this study I address the distinction between Hayes and Wheelwright's (1984) idea of proactive operations development and Skinner's (1969) idea of supporting the business strategy. The distinction and its performance implications have been developed to the greatest extent in the research on exploration and exploitation (e.g., Duncan, 1976; March, 1991; O'Reilly & Tushman, 2008; Raisch & Birkinshaw, 2008).

2.2.1. Exploration, exploitation, and performance

In this study I understand exploitation and exploration as organizational level adaptive efforts. For March (1991: 71) exploration is "things captured by terms such as search, variation, risk taking, experimentation, play, flexibility, discovery, innovation" and exploitation is "such things as refinement, choice, production, efficiency, selection, implementation, execution". In the strategy context, adaptation translates into firm competiveness and survival is understood in terms of market position (e.g., Ansoff, 1957; Porter, 1980) and resources and capabilities (Barney, 1991; Teece et al., 1997; Teece, 2007; Wernerfelt, 1984). Keeping with March's (1991) ideas of exploitation of old certainties and exploration of new possibilities, I define the terms in the following way:

> Exploitation is organization level adaptation by improving existing capabilities and by competing with existing market-offering combinations.
> Exploration is organization level adaptation by developing new capabilities and by competing by introducing new offerings or entering new markets.

The terms exploration and exploitation are associated with how firms search solutions to their problems (Katila & Ahuja, 2002; Stuart & Podolny, 1996). Exploitation is typically associated with using existing knowledge or local search, while exploration is associated with more far reaching search

that crosses organizational and technological boundaries (Gavetti, Levinthal, & Rivkin, 2005; Katila & Ahuja, 2002; March, 1991; Rosenkopf & Nerkar, 2001; Stuart & Podolny, 1996). However, Farjoun (2010) suggests that the relationship between search behavior and exploration and exploitation outcomes is more complex and allows for counterintuitive variations such as local search leading to exploration. Thus, to remain open to this possibility, I define search as behavior:

> Local search is knowledge gathering actions and interactions that remains within organizational boundaries.
> Boundary-spanning search is knowledge gathering actions and interactions that cross organizational or industry boundaries.

For the long term survival, firms need to pursue both exploitation for efficiency and exploration (March, 1991). Firms that focus all their resources on exploiting old certainties are poorly equipped to respond to environmental changes and thus are likely to face obsolescence (Leonard-Barton, 1992; Levinthal & March, 1993; Levitt & March, 1988). Firms that focus exclusively on exploration of new possibilities risk that the benefits of exploration are never realized and the firm becomes trapped in a cycle of search and failure (Levinthal & March, 1993). Because of these traps, long term performance is expected to be found by pursuing both exploration and exploitation (March, 1991; Tushman & O'Reilly, 1996).

There are two main perspectives to how firms manage the tension between exploration and exploitation. The punctuated equilibrium view suggests that firms cycle between stable periods of exploitation and bursts of exploration triggered by environmental change (Burgelman, 2002; Tushman & Romanelli, 1985). On the other hand, organizational ambidexterity research argues that the key to both short and long term survival is in combining exploration and exploitation (Adler, Goldoftas, & Levine, 1999; Duncan, 1972; Tushman & O'Reilly, 1996). Empirical research describes a variety of solutions for ambidexterity, such as the structural separation of exploration and exploitation (Duncan, 1976; Tushman & O'Reilly, 1996), the development of an organizational context that is conducive to ambidextrous behavior (Gibson & Birkinshaw, 2004), and the top management's ability to maintain and reconcile multiple alignments to current and emerging markets and technologies (Lubatkin et al., 2006; Smith & Tushman, 2005). The main difference is summarized as architectural and contextual approaches to ambidexterity (Andriopoulos & Lewis, 2009). Recent articles integrate the punctuated equilibrium view into the organizational ambidexterity construct as a sequential or temporal

form of ambidexterity (Simsek, Heavey, Veiga, & Souder, 2009; Venkatraman, Lee, & Iyer, 2007).

Architectural approaches to enabling ambidexterity are based on structural separation (Andriopoulos & Lewis, 2009). Structural separation addresses the tension between exploration and exploitation by assigning exploitation and exploration to differentiated organizational units such as manufacturing and R&D (Duncan, 1976; Tushman & O'Reilly, 1996). The separation allows each unit to align to the mutually incompatible requirements of either exploration or exploitation. Strategic integration of exploration and exploitation takes place at the top management level (Lubatkin et al., 2006; O'Reilly & Tushman, 2008). Top management team's unity of purpose (Lubatkin et al., 2006) and cognitive ability (Smith & Tushman, 2005) are necessary to coordinate the contradictory organizational alignments in the architectural approach to ambidexterity.

Contextual approaches build on behavioral and social mechanisms to integrate exploration and exploitation (Andriopoulos & Lewis, 2009). Primarily, the creation of supportive organizational contexts enable each individual to divide their time between explorative and exploitative tasks autonomously within the same unit (Gibson & Birkinshaw, 2004). In their study of 41 business units, Gibson and Birkinshaw (2004) found that this kind of ambidexterity is best supported with a combination, fostering support and trust as soft elements and discipline and stretch goals as hard elements. In terms of structures, a study of innovation in the computer industry shows that a limited amount of structure is useful to avoid chaos while leaving freedom to improvise within the projects (Brown & Eisenhardt, 1997). Alternatively, some firms develop parallel structures where people can switch from one structure to another, as appropriate (Adler et al., 1999). For example, the workers at Toyota's NUMMI plant would be given temporal assignments to a specialized team that worked together with engineering changeover team to design processes for new products (Adler et al., 1999). A case study of three innovation processes at Vaisala Oyj suggests that a contextually ambidextrous firm can leverage pure and more radical exploitation and exploration partnerships, such as contract manufacturing and university research collaboration (Kauppila, 2010). Thus, contextual ambidexterity is not to be viewed as a mutually exclusive alternative to architectural ambidexterity (Kauppila, 2010).

In the temporal mode of ambidexterity, firms alternate between exploration and exploitation phases. The traditional punctuated equilibrium view suggests that organizations go through short bursts of exploration followed by longer stable period of exploitation (Burgelman, 2002; Tushman & Romanelli, 1985). More recent literature has developed

the concept of vacillation (Boumgarden, Nickerson, & Zenger, 2012; Gulati & Puranam, 2009; Nickerson & Zenger, 2002). The basic assumption is that informal organization determines the functioning of the organization (Nickerson & Zenger, 2002). Formal structures shape this informal organization, but because of inertia the process is slow (Nickerson & Zenger, 2002). In situations where none of the alternative organizational structures is optimal (e.g. centralized or decentralized), alternating between the two forms can sustain the informal organization and thus organizational functioning closer to optimal (Nickerson & Zenger, 2002). Viewing formal reorganization as a means to alter the informal organization, Gulati & Puranam (2009) note that external environments differ in whether focus or ambidexterity is more beneficial. Comparing two longitudinal cases of successful companies (HP and USA Today), Boumgarden et al. (2012) note that simultaneously ambidextrous organizational forms lasted only for a while until more explorative or exploitative was needed. They argue that the vacillation of organizational forms in these companies over time influenced their long term success (Boumgarden et al., 2012).

Summarized in Table 3, the empirical studies show support for pursuing both exploration and exploitation. The study of Katila & Ahuja (2002) shows that search that adds depth to existing knowledge has an inverted-u shaped effect on new product introductions, and search depth positively interacts with search for new knowledge. The simultaneous ambidexterity hypothesis that is operationalized as an interaction between exploration and exploitation is generally supported (Chandrasekaran, Linderman, & Schroeder, 2011; Gibson & Birkinshaw, 2004; He & Wong, 2004). Some of the studies report positive performance effects for simultaneous ambidexterity in terms of relative balance between exploration and exploitation (Chandrasekaran et al., 2011; He & Wong, 2004). Lubatkin et al. (2006) test different operationalizations for ambidexterity and suggest that an additive model where exploration and exploitation are summed works best. They also find a positive association with performance. Uotila et al. (2009) find support for the view that simultaneous ambidexterity is associated with market value of the firm. Furthermore, they show that the optimal share of exploration activity is higher in R&D intensive industries and that the majority of the studied firms did not explore enough. Not testing for balancing explicitly, Kristal, Huang, & Roth (2010) found that ambidextrous supply chain strategy as a reflection of explorative and exploitative supply chain practices is associated with better operations capabilities and firm profitability. As a contrary result, Venkatraman, Lee, and Iyer (2007) did not find an effect between simultaneous ambidexterity

and performance. However, they found an effect for sequential ambidexterity where exploration periods follow exploitation and vice versa. The performance effect of sequential ambidexterity is also supported by the case study of Boumgarden, Nickerson, & Zenger (2012). Finally, Zhang, Linderman, & Schroeder (2012) found that in an uncertain environment, explorative quality management practices are aligned with organizing organization structure, and exploitative quality practices with mechanistic structures. In sum, research shows that engagement in both exploration and exploitation is associated with higher performance.

Table 3 Empirical studies of exploration and exploitation

Study	Data	Exploration and exploitation	Results
Katila and Ahuja, 2002	Product introduction announcements and patent data of 124 robotics industry firms from 1985-96	Search scope is the degree of new knowledge that is explored (exploration). Search depth is search that revisits a firm's prior knowledge (exploitation).	Search depth (exploitation) has an inverted-U shaped effect on number of new product introductions (NPI). Search scope has a positive, linear effect on # of NPI. Interaction of search depth and search scope has a positive effect on # of NPI.
Gibson and Birkinshaw, 2004	Cross-sectional, survey of 41 business units with a total of 4195 respondents	Organizational capacities to align (e.g. working towards common objectives) and adapt (e.g. quick response to market changes)	Simultaneity (interaction) between alignment and adaptability is positively associated with perceptual performance
He and Wong, 2004	Cross-sectional, survey of 206 manufacturing firms	The importance of entering new product-market domains and the importance of improving efficiency in existing product-market domains	Simultaneity(interaction) of exploration and exploitation is positively associated with sales growth rate and balance (relative difference) between exploration and exploitation is negatively associated with sales growth rate
Lubatkin et al., 2006	Longitudinal (1 year), 139 small and medium sized firms	Within firm orientation to exploring (e.g. creativity, innovation) and exploitation (e.g. productivity, quality)	Ambidexterity as a sum of exploration and exploitation orientation is significantly associated with perceptual firm performance collected 1 year later
Venkatraman et al., 2007	Longitudinal (13 years) secondary data from 1005 firms with 4513 firm-year observations	Exploitation as the similarity of product markets at *t* and *t-1*, and exploration at *t-1* implied by new product launches at *t*	Simultaneous ambidexterity (interaction in same time period) is not associated with sales growth while temporal cycling of exploration and exploitation (interaction across 2 time periods) is.
Uotila et al., 2009	Longitudinal (25 years) secondary data from 279 manufacturing firms	Content analysis of news articles based on the definitions of March (1991)	Relative share of exploration has an inverted U relationship with firm performance measured as market value. This relationship is positively moderated by the R&D intensity of the industry. Furthermore, 80% of studied companies engaged in exploration below optimal levels suggested by the analysis.

Study	Data	Exploration and exploitation	Results
Kauppila 2010	In-depth field study of three innovation processes at Vaisala Oyj	Exploration as new technology development and research. Exploitation as manufacturing.	Interorganizational partnerships are a good tool for radical exploration and exploitation. These external collaborations are complemented by internal ambidexterity. Structural and contextual ambidexterity can exist successfully in same firm.
Kristal et al., 2010	Cross-sectional survey of 174 U.S. manufacturers	Exploitative supply chain practices (e.g. existing problem solving methods, supplier integration) and explorative supply chain practices (e.g. new problem solving methods, supplier engagement)	Ambidextrous supply chain strategy (use both explorative and exploitative supply chain practices) is associated with better delivery, quality, flexibility, and low cost capabilities and firm profitability
Chandrasekaran et al., 2011	Cross-sectional survey of 34 high-tech business units, 110 R&D projects	Exploration as business unit competency in introducing new products, technology, or opening new markets and exploitation as competency in extending product range, refining quality and reducing costs	Simultaneity (interaction) and balance (relative difference) of exploration and exploitation competencies are associated perceptual financial performance
Boumgarden et al., 2012	Theoretical discussion using two longitudinal cases as illustrations	Exploration as organizing decentralized and autonomous units and exploitation as integration and centralization	The case companies sustained long term performance by vacillating between exploration and exploitation. Ambidextrous organizational structures did not last.
Zhang et al., 2012	Cross-sectional survey of 238 manufacturing plants in 8 countries	Exploration and exploitation as differences in quality management practices	In low uncertainty environments, quality exploitation is associated with plant performance independent of structure. In high uncertainty environments, quality exploitation is aligned with mechanistic organizational structure and quality exploration with organic structure.

2.2.2. **Exploration and exploitation in operations strategy context**

Research has addressed exploration and exploitation in multiple different empirical contexts and different levels of organizations. As examples of exploration and exploitation activities, previous studies have focused on developing completely new products and adjusting existing products (Abernathy & Clark, 1985; Benner & Tushman, 2003), flexibility and productivity in manufacturing (Abernathy, 1978; Adler et al., 2009, 1999), new competences and leveraging existing ones (O'Reilly & Tushman, 2008; Teece et al., 1997), and variation increasing and variation reducing strategic processes (Burgelman, 1991, 2002; Volberda, Baden-Fuller, & van den Bosch, 2001). Furthermore, these examples highlight the multilevel nature of ambidexterity (e.g., Raisch and Birkinshaw, 2008; Andriopoulos and Lewis, 2009). Therefore, to discuss exploration and exploitation in an operations strategy context we need to specify our focus on what is exploited and explored, who exploits and explores, where, and when.

Although not linked to the exploration and exploitation discussion, the idea of exploration as a part of operations strategy fits well with the argument of Hayes and Wheelwright (1984). They argued that the operations function can adopt a proactive strategic role by developing needed capabilities for capturing current and future business opportunities. This argument stood in contrast to the purely exploitative view of Skinner (1969, 1974) who claimed that operations-based competitiveness stems from aligning operations with business strategy. However, these seminal articles understand operations strategy in relation to firm's market position which reflects the strategy theorizing at that time (e.g., Ansoff, 1957; Porter, 1980). Newer theorizing in strategy complements this market focus by emphasizing the development of internal capabilities as an alternate source of competitiveness (Barney, 1991; Teece et al., 1997; Teece, 2007; Wernerfelt, 1984). For instance, a dramatic improvement in performance can cause disruptions in markets (Henderson & Clark, 1990). Therefore an operations strategy perspective to exploration must consider both exploration in markets for new business and the exploration of new technological opportunities for radical performance increase. Accordingly, exploitation is characterized by supporting current business and incremental performance improvement.

In a recent theoretical article, Farjoun (2010) issues a caution by arguing that the exploration-exploitation model assumes a too strict link between behavior and outcomes. Using several empirical examples, Farjoun (2010) argues that mechanisms such as processes and practices are not mapped

directly to change or stability outcomes as exploration-exploitation model suggests. For example, in high-reliability organizations trial-and-error behaviors typically associated with exploration are central to learning which preserves stability in terms of safety (Wildavsky, 1991). Similarly, studies show that, while typically associated with exploitation, stable routines and processes support innovation and dealing with surprises (Bigley & Roberts, 2001). In this sense the studies testing the ambidexterity hypothesis (included in Table 3) operationalize exploration and exploitation inconsistently, either as a ability to produce firm level outcomes such as new product introductions (Chandrasekaran et al., 2011; Gibson & Birkinshaw, 2004; Venkatraman et al., 2007) or as a characteristic of collective behavior such as an orientation to explore (He & Wong, 2004; Lubatkin et al., 2006). As the studies of He and Wong (2004) and Lubatkin et al. (2006) show, there is some indication that exploration and exploitation behaviors are associated with producing change and stability respectively. Farjoun (2010) does not contest this possibility, but reminds that the relationship between behavior and outcomes is less clear and that a strict classification into exploration or exploitation fits poorly with firm activities in reality.

In this study, I draw on Farjoun's (2010) distinction between the behavior and outcome aspects of exploration and exploitation. Interested in the "how" and "why" questions, my empirical focus is on what people do to develop strategic intentions to operations capability development. For exploration and exploitation, I follow the existing research that understands exploration and exploration as organization level outcomes. In this study the role of the exploration and exploitation distinction is to characterize different strategic intentions to operations capability development. Therefore, I use the following definitions to analyze operations strategy creation:

> Explorative strategic intentions to operations capability development aim to capture new business and/or gain radical performance improvements.
> Exploitative strategic intentions to operations capability development aim to support current business and/or gain incremental performance improvements.

2.3. A practice perspective to strategy creation

> "Thinkers once spoke of 'structures,' 'systems,' 'meaning,' 'life world,' 'events,' and 'actions' when naming the primary generic social thing. Today, many theorists would accord 'practices' a comparable honor." *(Schatzki, 2000a: 11)*

Applicable on different levels to myriad research topics, the practice perspective focuses on how actions of humans are related to the social

world (Feldman & Orlikowski, 2011). As an empirical focus, the practice perspective turns our attention to what people do (Feldman & Orlikowski, 2011). On a theoretical level, practice scholars turn their attention to specific relationships. For example, structuration theory of Giddens (1984) can be applied at the micro level to describe how actions produce and reproduce the structures of the social world. Alternatively, the same practice theory can trace changes and developments in the institutions (Giddens, 1984). On a philosophical level, Schatzki (2000) and other practice theorists regard practices as the fundamental building blocks of the social world.

Rather than a formal, well-defined grand theory, contemporary practice theory is described by various authors (Golsorkhi, Rouleau, Seidl, & Vaara, 2010; Reckwitz, 2002; Schatzki, 2000a) as a set of theorizing. The intellectual roots of practice theory are in the philosophy of Wittgenstein (1951). Practice theory has been advanced through the works of Bourdieu (1977, 1990), Foucault (1977), structuration theory (Giddens 1984), activity theory (Engeström, Miettinen, & Punamäki, 1999; Vygotsky, 1978), ethnomethodology (Garfinkel, 1967), activity network theory (Latour, 2005), the neo-hermeneutical model (Taylor, 1985), and practice philosophy (Schatzki, 2002). This overview of practice theorizing draws primarily on the edited book by Schatzki, Knorr-Cetina, & Savigny (2000) and strategy-as-practice research (Golsorkhi et al., 2010).

In strategy research, practice perspective opens up the 'black box of strategizing' and thus broadens the perspective beyond studying merely the effects of strategies on firm performance (Golsorkhi et al., 2010). Strategy-as-practice is a young stream of research with landmark articles published in the late 1990s (Whittington, 1996) and early 2000s (Johnson, Melin, & Whittington, 2003). As a special feature, the study of practice has the additional benefit of making it easier to discuss research findings with practitioners and thus holds a promise of actionable practical advice (Feldman & Orlikowski, 2011; Johnson et al., 2003; Whittington, 2006).

Operations management scholars are no strangers to looking inside the black boxes of management research, either. There is long standing interest in operations management practices. Studies have addressed the effects and adoption of, for instance, workforce management practices (Kathuria & Partovia, 1999), world class manufacturing practices (Flynn, Schroeder, & Flynn, 1999; Ketokivi & Schroeder, 2004b), and environmental practices (Sarkis, Gonzalez-Torre, & Adenso-Diaz, 2010). As another example, the practice of lean manufacturing consists of a set of practices such as preventive maintenance or pull production practices (Shah & Ward, 2003). Although operations management research does not refer to practice

theory, the idea of a set of routinized behavior as an analytical focus is not foreign. Operations strategizing practices, however, remain largely unstudied (Brown et al., 2007, 2010).

2.3.1. **Practice theory as a cultural theory**

A central concern of social theorizing is social order and its production (Schatzki, 2000a). The idea of social order originates from Thomas Hobbes' arguments that sovereign power is the only way to avoid a state of total war and to ensure peace and harmony (Schatzki, 2000a). Later, many thinkers, such as Talcott Parsons, have sought to understand order as a feature of social life (Schatzki, 2000a). Among the variety of conceptualizations for order, the most common features are regularities, patterns, interdependent functioning or stabilities in social affairs involving individuals and their interactions (Schatzki, 2000a). Ideas about what produces social order are equally varied with explanations pinned to actions of individual as well as broader phenomena influencing action (Schatzki, 2000a). As a well-known example, Adam Smith argued that the self-interested bargaining between individuals produces orderly life and common good by using a nation's resources for purposes that are valued by people - as if guided by an invisible hand.

Practice theory can be classified as a "cultural" theory, which is one of the three fundamentally different forms of understanding action and social order (Reckwitz, 2002). "Economic" theories understand action as a result of the pursuit of an individual's own interests. Social order is produced in a combination of these single purposes. In contrast, "sociological" theories understand action as the result of conforming to collective norms and values. Social order is simply a matter of consensus about the norms. Practice theory falls into the third broad group that Reckwitz labels as "cultural" theories. "Cultural" theories understand actions by "reconstructing the symbolic structures of knowledge which enable agents to interpret the world according to certain forms, and to behave in corresponding ways" (Reckwitz, 2002: 245–246). Because this knowledge is shared by the collective, agents interpret the world in a shared way, which leads to patterns in behavior that reproduce the social order (Reckwitz, 2002).

Practice theory is a specific form of cultural theory (Reckwitz, 2002). Practice theory differs from other cultural theories with regard to where it places the social (Reckwitz, 2002). Other theories place the social as symbolic structures in the human mind (e.g. Claude Lévi-Strauss), in publicly visible signs, symbols, and texts (e.g. Clifford Geertz), or in interactions between humans (e.g. Jürgen Habermas). In practice theory

the social is placed in practices (Reckwitz, 2002). Reckwitz defines a practice as "a routinized type of behaviour which consists of *several elements*, interconnected to one another: forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge" (Reckwitz, 2002: 249). In contrast to other cultural theories, practice theory understands action and social order as not only a result of cognitive processes or the use of language, but also bodily movements and material objects.

As an example of different elements of practice, consider dancing. What is it that makes two persons synchronize their movements to produce something that we all recognize as a waltz? There might be public signs such as band posters that signify that the specific kind of dancing is likely to take place. A nightclub is different from a ballroom as a setting. People might be dressed in a specific way. Of course, the music itself provides a strong cue. The singer might announce the dance. There is certainly a lot of cognitive processing involved in interpreting that a waltz is indeed an appropriate dance for the situation. Yet, there is also a material and bodily aspect to producing something that is recognized as a waltz. A waltz requires the dance partners to sense each other's movements, for instance, where the partner's feet are or to what direction the leading partner is moving. This type of interaction combines the routine movements (the dance steps and their timing in relation to the rhythm of the music) that both partners know to produce something that others recognize as waltzing. Of course there is plenty of room for variation within the practice: a performance in a dance competition tends to be notably different from a waltz in a wedding. Or perhaps the partners show their own signature move. Yet, the recognition by others that this is waltz implies some form regularity or stability in the practice of waltzing which is the social order.

2.3.2. **Basic ideas in the practice theory**

Practice theory holds a dynamic world view where reality is constantly in flux (Feldman & Orlikowski, 2011). In this view there is change but also considerable stability and regularity. The social world does not exist in a static sense but is rather instantiated in every occasion. The stability in human action is understood as a process of reproducing the social order, or the world. What may seem to be static and stable to an observer is simply recreated in the same or very similar form.

Practice theory proposes that *by engaging with practices, practitioners produce and reproduce the social world in their praxis*. To define the terminology, *practitioners* are the persons in question and *praxis* is what

actually happens in an empirical setting. *Practice* is a shared type of understanding and behaving. To the extent that the practice is shared across time and place, practitioners tend to understand and act in similar ways. This is the role of practices in the reproduction of the social world. However, in some situations practitioners introduce variation: they may bring influences from other related practices, invent a new one, or simply choose to act differently. Because of practitioners' agency the social world is sometimes produced like never before.

Practices shape our understanding of what it makes sense to do and what we understand people and things to be (Schatzki, 2000b). People tend to do what makes sense for them, which itself is influenced by practices (Schatzki, 2000b). For instance, when cooking it makes sense to wash the vegetables before chopping them. Practices also influence the process of assigning meanings to people and things (Schatzki, 2000b). Seeing someone heating water in a kettle might make me think that cooking is about to take place. However, if that person proceeds by adding soap to the water, I will come to expect some kind of dish washing. These understandings are possible because I know how to cook and wash.

To take an academic conference session as an example of a social practice, I have specific ways of understanding and behaving as a member of the audience. During the presentation I tend to find myself doing a sort of reviewing or evaluation of the research being presented. I ask myself whether the methodology is convincing and the theoretical foundation solid. This type of evaluation is a broader practice that researchers also engage in when merely reading research articles or performing peer reviews. In the discussion period following the presentation, more often than not someone else will ask about some methodological detail or suggest a variable that the presenters may have not considered. Of course there are many other things going on as well, but this kind of review-oriented discussion is a fairly regular occasion in a conference session. Occasionally I have reproduced this review-orientation because it has made sense to me to ask such questions in order to understand the study better or to try to help the presenters to improve their research. Another reason to ask such questions is to try to establish myself, a doctoral student, as a competent member of academia. While possibly lacking mastery, I was a practitioner in the practice of participating in an academic conference.

The shared nature of practices is a result of a learning process through which practitioners become members of the practice (Barnes, 2000; Turner, 2000). Practices are learned from others and by engaging in the practices (Barnes, 2000). The Academy of Management 2009 Annual Meeting was the first conference I attended. I remember doing a lot of

observing. For instance, on the morning of the first conference day I was wearing a suit only to realize that the majority had dressed more casually. Wearing shorts and a t-shirt himself, one of my senior colleagues from the home university "complimented" on a nice suit. At the first session break I dropped off the suit jacket in my hotel room. This example touches just a small part of what is a routine set of understandings and behaviors.

Furthermore, *practices are shared to varying extents*. Some practices such as doing arithmetic (e.g. 1+1=2) or grammar are extremely widely shared because the learning process converges towards one correct mastery regardless of the learner's personal goals (Turner, 2000). On the other hand, practices that are purpose-relative involve divergent learning because of divergent goals (Turner, 2000). Turner (2000) uses an example of beach dressing as a less shared practice. There are several ways to dress for a beach and several reasons for choosing a particular outfit e.g. getting a tan, avoiding sunburn, receiving admiring glances, or avoiding shame. Depending on goals, one would learn and adjust the practice towards different directions, e.g. towards better sun protection or attractiveness. In the management context, there are practices that are confined within single organizations and practices that are shared across several organizations (Whittington, 2006).

The examples I have used here also highlight the idea that practices are not isolated from each, other but are located in a field of practices (Schatzki, 2000a; Swidler, 2000). Individuals can be understood as nexuses of practices (Chia & MacKay, 2007) and thus people encounter situations with multiple practices. For instance, I will listen politely to an academic conference presentation partly because that is part of the practice of being an audience to any kind of performance, at least in Finnish culture. As another example, women in certain cultures are likely to wear well covering clothes to the beach because of the prevailing practices of female dressing in public places. Furthermore, Barnes (2000) notes that the enactment of specific practice is not explained by the practice itself but by other practices. As Barnes illustrates, , a cavalry unit probably does not charge, say twice a week, just because it can. Rather, charge is triggered by the commander's signal which itself is based on various things such as commander's memory of previous charges, observations of the enemy and terrain, as well as some ideas of military strategy (Barnes, 2000).

Yet, there are many situations that cannot be explained by reference only to the reproduction of social order. Human *actors are not determined to reproduce the social order but to have agency*. Agency is the freedom to think and act otherwise (Giddens, 1984). As an example of agency, consider understanding and acting based on a red traffic light. In most cases drivers

do indeed reproduce the order that results in safe traffic. Yet, there are cases where the red traffic light is ignored for various reasons such as reckless driving to escape the police or bending the rules for convenience in the middle of the night with no one else in sight. Another case where action can be only understood by referencing agency is when the actor engages with one of the alternative practices that are relevant to the situation (Giddens, 1984). For example, consider a police officer stumbling upon an armed robbery while enjoying a vacation with his children. Can we reliably predict his split-second decision to act in the situation as a police officer or as a father? The point is that practice theoretical explanations are likely but not deterministic ways of understanding and acting.

Finally, *practices themselves are not static but change and adapt*. Learning the shared practice holds an opportunity to do things a little differently and sometimes these adjustments begin to spread and thus change the shared practice (Barnes, 2000). Furthermore, practitioners adapt practices to new situations and take influences from other practices.

2.3.3. The contributions of practice perspective to strategy and organization research

The practice perspective provides a unique perspective to strategy. The origins of strategy-as-practice research are in extending strategy process research by focusing on what people do (Johnson et al., 2003; Whittington, 1996, 2006). Some argue that strategy-as-practice should adopt practice philosophy more fully in order to establish itself as a distinct perspective to strategy (Chia & MacKay, 2007). Others highlight the opportunity of integration and discussion with other streams of strategy research (Johnson et al., 2003). Nevertheless, strategy-as-practice scholars agree on the value of diversity in both methodology and theoretical backgrounds (Golsorkhi et al., 2010).

Strategy-as-practice research extends strategy process research by bringing attention to what strategy practitioners actually do (Johnson et al., 2003; Whittington, 1996, 2006). Both strategy process and strategy-as-practice research share an interest in how strategies emerge, often utilize small sample methods, and view strategy as an organizational phenomena (Johnson et al., 2003). From the strategy-as-practice perspective, strategy process research does not venture deep enough into the black-box of strategizing and is thus limited in understanding what managers do, what difference their actions make, and in offering managers practical advice on what they should do (Johnson et al., 2003). Strategy-as-practice research has extended our understanding of topics such as the role of formal practices such as strategy workshops (e.g., Hodgkinson, Whittington, Johnson, & Schwarz, 2006), the role of sense-making (Balogun & Johnson,

2004), the discursive aspects of strategizing (e.g., Samra-Fredericks, 2003), the influence of context on strategizing (e.g., Regnér, 2003), the role of strategy tools (e.g., Kaplan, 2011), the role of materiality (e.g., Giraudeau, 2008), and issues of power (e.g., Mantere & Vaara, 2008).

Some authors call for the development of strategy-as-practice into a more distinctive perspective by adopting the philosophical premises of practice theory (Chia & MacKay, 2007; Tsoukas, 2010). According to them, the current focus on individuals and groups within an organization retains the idea that all phenomena are secondary effects of individuals' deliberate actions. That position does not recognize the collective and often unconscious nature of actions. Usually, people act without giving it much thought. The ontology of practice theory gives primacy to social practices. This means that both individuals and organizational phenomena are to be primarily understood as effects of practices. For instance, being a strategy consultant stems from performing a set of strategy consulting practices. Thus, a shift towards a practice ontology would help to overcome the methodological individualism and establish strategy-as-practice as a unique perspective (Chia & MacKay, 2007; Tsoukas, 2010).

The practice perspective adds a new twist to thinking about the gap between practice and theory (e.g., Corley & Gioia, 2011; Van de Ven & Johnson, 2006). On the one hand, strategy-as-practice research aims to produce more immediately actionable knowledge (Johnson et al., 2003; Whittington, 2006). On the other hand, practice theory problematizes the idea of practical utility of research: if practices transfer through learning by engaging in practice then what is the research needed for (Jarzabkowski & Wilson, 2006; Langley, 2010)? There is, however, another use for theories as knowledge artifacts in conceptualizing situations and legitimating actions or goals (Jarzabkowski & Wilson, 2006). The normal science model of testing and developing increasingly valid theory that "carries the stamp of truth" and still leaves enough room for interpretation is likely superior in legitimating (Langley, 2010). Jarzabkowski and Wilson (2006) suggest that the practice perspective could complete the feedback loop by describing how strategy theories are used and thus serve as a basis for refining theories. Langley (2010) suggests that by becoming an apprentice-practitioner and documenting the learning, a researcher may be able to explicate the more tacit and subtle aspects of being a skilled practitioner. Finally, the practice perspective can help to identify mechanisms for changing practices and for preserving those practices that are effective (Feldman & Orlikowski, 2011). The grounding in the actions of practitioners does make practice theoretical findings readily usable (Feldman & Orlikowski, 2011; Johnson et al., 2003; Whittington, 2006).

Finally, the adoption of the practice perspective can produce contributions to existing strategy discourses (Feldman & Orlikowski, 2011; Johnson et al., 2003). For example, there is an ongoing effort to advance the dynamic capabilities framework with the practice perspective (Parmigiani & Howard-Grenville, 2011; Regnér, 2008). Regnér (2008) notes the similarities between the concepts of routine and practice and how attention to who, what, where, and how could add to the understanding of the build-up of organizational assets. For instance, the dynamic capabilities view is yet to recognize multiple actors' or individuals' agency (Regnér, 2008). Similarly, Parmigiani and Howard-Grenville (2011) call for a combination of the breadth of the capability perspective and the depth of the practice perspective to better understand organizational routines.

In summary, practice theory offers a distinct perspective to studying strategy and other organizational phenomena. A practice theoretical contribution typically adds depth to extant understanding by focusing attention to practitioners and their practices. Generalizations from practice-based studies are not predictions but principles that explain action (Feldman & Orlikowski, 2011). Given the collective, shared nature of practices, these principles potentially hold even on a societal level. The power of the practice perspective stems from an ability to transfer understanding from one context to another without losing contextual grounding (Feldman & Orlikowski, 2011).

3. Methods

3.1. Research design

This is a theory-building empirical study. I approached the theory-building task by collecting empirical data and familiarizing myself with existing related theorizing. Through inductive analysis I develop an explanation for how and why explorative and exploitative operations strategic intentions are developed.

I selected the embedded single case study design because it matched the need to gather rich data from what people do, to understand context in great detail, and to be able to compare and contrast. An in-depth understanding of the company context was necessary because the discussions in the strategizing meetings revolved around the concrete operations topics. Following such discussion required a working knowledge of, for instance, the company specific terminology, product architecture, organization structure, manufacturing network and plant roles in it, on-going major development programs, and the names of key managers. Focusing on a single case allowed me more in-depth understanding than multiple-case alternatives.

One of the reasons for selecting the global machinery manufacturing company as the case was the unusual access to observe operations strategy creation activity. From the perspective of purposive sampling (Barratt et al., 2011; Eisenhardt, 1989), the case company operates in a technology-based business where continuous renewal is important for sustained competitiveness (Chandrasekaran et al., 2011; Uotila et al., 2009). Given the reputation as a well-managed and profitable company, it was likely that strategizing would address operations capability development as well. Whether there would be radical transformation was, of course, completely uncertain. Nevertheless, describing the operations strategy creation of a successful firm also has some potential for benchmarking purposes (e.g., Choi & Hong, 2002). From the practice theory perspective, the large size of the company meant that strategy creation would be social activity and thus observable. In contrast, in the few small to medium sized companies that I

have had contact with the operations strategy creation has been done by the COO alone.

The embedded unit of analysis is *a strategy creation team's activity in developing the strategic intentions*. This definition strikes a careful balance. On the one hand, the concept of team was central for the participants and the organizers themselves in arranging the strategy work. Also, the cross-team analysis functions primarily at the level of teams. On the other hand, identifying the ways that actors draw on the strategy creation practices requires analyzing detailed action and interaction. Thus, I extend the analysis to the level of action and interaction. Last, the advantage of embedded design is to control for some idiosyncrasies of the case. Differences between teams' activity could be explained by observable differences instead of difficult to capture corporate level phenomena such as organizational culture or the CEO's leadership, for example.

3.2. Description of the case

Using a pseudonym Global Machinery Manufacturer (GMM), the case company is a manufacturer of machinery products. It ranks in the top five in terms of global market share within its own industry segment. With over 30 000 employees, GMM has a global presence and its manufacturing network consists of sites in Europe, Asia, and the Americas. Over the past decades, GMM has grown through mergers and acquisitions. Subsequently, the company was managed like a holding company; the local managers had free reign, practically, as long as their units were profitable. Since early 2000s, GMM has focused on integrating itself to a global company. In addition to new product sales and installation, the maintenance services are also an important business area for GMM today.

I studied an operations strategy process in real-time as it unfolded at the case company. Towards the end of 2009, the Senior Vice President of Operations launched a corporate-wide initiative for creating an operations strategy in a new way. Involving a large group of people from different organizational units to work in teams under different topics, such participatory strategy process was the first in GMM's history in the area of operations. To be clear, GMM had prior formal operations strategies but the process of creating them was new. The intention already at this point was that such a strategy process would take place on a yearly basis in the future. Figure 1 provides an overview of two annual cycles of operations strategy process as well as the data collection efforts.

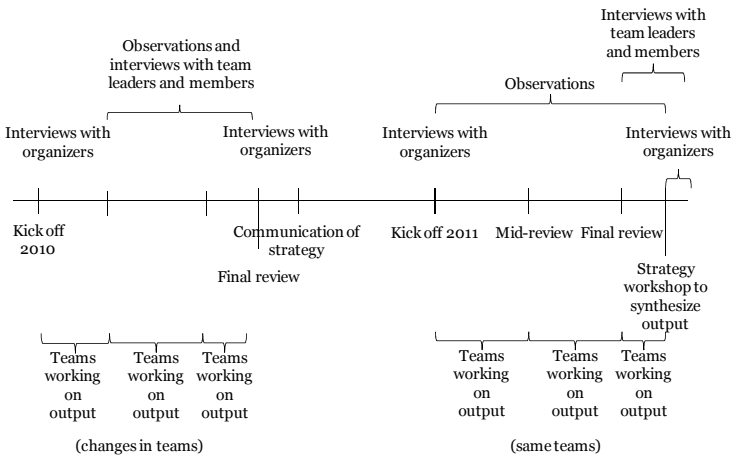

Figure 2 Time line of the two cycles of strategy process and data collection

As the lower part of Figure 2 highlights, there were some differences between the strategy creation process of 2010 and 2011. In 2010 the work was scheduled in three phases and the teams were mixed between each phase. The first phase was brainstorming with teams consisting of people who had little expertise of the topic. In contrast, the second and third phase teams are similar to the 2011 teams, which consisted of experts from various functions. One of the objectives was to capture knowledge, new ideas, and innovations embedded in the global organization. Subsequently, the training offered to participants did not include any explicit strategy frameworks; working out the details was left for each of the strategy creation teams to figure out for itself. In 2011 the teams stayed the same from kick-off to final workshop. Moreover, the organizers participated more in strategizing by holding mid and final review meetings to guide the teams. Although some of the 2010 interviews touched on the experiences from the first phase as well, the data collection focused on the second and the third phase, which were similar to 2011 strategy creation.

The strategy creation activity of the teams was finalized in a final workshop. There, each team leader presented the results of their strategizing to other team leaders and organizers for discussion. Through this discussion the ideas were further refined by drawing connections between teams and suggesting additional perspectives to consider. The second important function of these workshops was for the organizers to identify common themes. These themes served as the overall messages that tied the results of the teams into a single operations strategy.

3.3. Data collection

The overall process of data collection and analysis was highly iterative. I began initial analyses with the first interview. At the outset, the role of the strategy-as-practice research was to attract attention to what people actually do when creating operations strategies. Since then, I have continued the process of analyzing and comparing the emerging findings with literature to continuously refine my understanding of the case and related prior theorizing. As of today 26.4.2013, I have written 176 memos documenting various thoughts and ideas about the emerging theoretical understanding, decisions, ideas for additional analyses, and the progress and setbacks in paper projects.

As the timeline in Figure 1 illustrates, I collected data over a period of 22 months from March 2010 to December 2011. Working in collaboration with another researcher, I collected the data through multiple methods: observations of strategy process work, semi-structured interviews, and company documents (strategy presentations and teams' output slide sets). I managed and analyzed the dataset using the Atlas.ti QDA software package.

3.3.1. **Observations**

In order to obtain an in-depth understanding of the process and actual decision making as it unfolded in the organization, I drew on observations of one kick-off session, 28 strategy creation team meetings, and a two-day strategy workshop. These lasted for 51 hours in total. Due to the global presence of the participants, the kick-off session and the majority of meetings were held over a teleconference and on-line screen sharing tool. I participated physically in one meeting and joined others over the teleconference together with the other participants. In this sense the experience of the meetings is similar to that of the members involved in decision making; in the teleconference meetings I heard the voice and saw the documents being worked on, just like the decision makers. Such an online format also aided in the efforts to remain as unnoticeable as possible. During the second annual strategy cycle I also attended a two-day face-to-face final workshop where the participants were physically present. The researcher role as mere observer of strategy work marks a difference with past case studies on operations strategy process (cf., Menda & Dilts, 1997, Platts et al., 1998, Rytter et al., 2007) that have incorporated action research elements where researchers enter organizations in order to test particular operations strategy creation frameworks and thereby could significantly influence the strategy work.

The observation data was collected by taking notes that also included verbatim sections that attempted to capture the discussion in the exact

words of the participants (Spradley, 1980). In the teleconference meetings the focus was on the discussion, and in particular on what kind of events led to changes to the documents being worked upon. Thus, I focused on taking notes of the discussion, edits to slides being shared, and what was shown on the shared screen. I also took notes on who was present and any changes in attendance during the meeting as well as who was speaking or responsible for editing the strategy work. In the workshops where I was physically present I took notes on additional things, such as where particular persons placed themselves and expressions in their faces (e.g., leaning forward, looking bored, smiling) that would hold cues about the attitudes towards what was being worked on. Yet, the main focus was still on taking notes on the interactions (e.g., discussion, edits, slides being shown) that most visibly shaped the strategy.

Here the collaboration with another researcher had a specific benefit. We performed the majority of observations together, each taking notes on our own. This enabled us to compare and synthesize our separate notes into a single, more comprehensive and accurate set of field notes.

3.3.2. **Interviews**

I conducted semi-structured interviews with people from various organizational levels participating as team leaders and team members. I also interviewed those responsible for organizing the whole strategy process in both cycles and at different stages of the process. Most of the interviews were carried out over telephone due to geographical distance. A total of 40 interviews were carried out, each lasting from 1-2 hours. All the interviews were tape recorded and transcribed for analysis.

The interviews were based on a semi-structured design, using an interview guide which was modified as the analysis progressed (see Appendix A). The approach for interviews was creating a conversation with the interviewee as suggested by Rubin and Rubin (2005). This served the interest in how each interviewee saw and perceived the operations strategy process. Therefore, I encouraged the respondent to tell about his/her own experience and to include concrete examples. The interviews followed the interview guide that listed broad themes and probes to spark more detailed descriptions (e.g., Rubin & Rubin, 2005).

3.3.3. **Company documents**

The strategy process teams were asked by organizers to produce output documents in various stages of the process, and some of them were reviewed and discussed with the organizers during the process. These documents are mainly presentation slide sets created to serve either as

meeting agendas or to present more detailed analysis. I used the materials to learn more about the context, to support the observations of the strategy meetings, and to validate some of the conclusions that I made regarding the team level processes.

3.4. Analysis

The first part of analysis was to describe each team's activity in developing the strategic intentions. I organize this analysis stage using "the three P's" framework from strategy-as-practice research (Whittington, 1996, 2006). The three P's are *practitioners*, collective social *practices*, and *praxis*, which was the actual situated activity. To identify practitioners, primarily I drew on the strategy process introduction slides which detailed participants. Interviews provided additional detail. For practices, I applied coding and categorization techniques (Corbin & Strauss, 2008; Glaser & Strauss, 1967) to the interview and observation data. For praxis, I followed the narrative strategy for organizing process data (Langley, 1999). Primarily based on the team leaders' own accounts, I constructed chronological stories of how the team developed their strategic intentions.

In the cross-team analysis I compared and contrasted the teams both against each other and the existing theorizing on exploration and exploitation and social practices. In particular I focused on the construct of search and its local or boundary-spanning qualities, which are central to existing theorizing on exploration and exploitation. I followed the replication logic to inference which views each case as a separate experiment (Yin, 2003). Similarity of patterns among several cases adds robustness to the analytic generalization. Divergent patterns are opportunities to refine or rule out generalizations. I concluded the analysis with a description of four patterns of the development of strategic intentions.

3.5. Validity, reliability, and reflexivity

There are a number of tactics that I used to ensure the quality of this study. Drawing on Yin (2003), I provide an overview of these tactics in Table 4.

Table 4 Validity and reliability enhancing tactics used in this study

Tests	Definition (Yin, 2003)	Tactics used in this study
Construct validity	"Establishing correct operational measures for the concepts being studied"	Multiple sources of evidence (interviews, observations, and documents) Real-time data collection Chain of evidence in data collection and analysis Informant review draft case study report (motivation to participate, anonymity)
Internal validity	"Establishing a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships"	Explanation building approach to data analysis
External validity	"Establishing the domain to which a study's findings can be generalized"	Grounding in existing theory Replication logic
Reliability	"Demonstrating that the operations of a study can be repeated, with the same results"	Memo writing Interview guides Tape recording interviews Observation by multiple researchers Review of coding by another researcher

In this study I used four tactics to improve construct validity. In construct validity the concern is that concepts are measured properly (Yin, 2003). First, the use of multiple sources of evidence enables triangulation. Second, collecting data in real time as the process takes place helps to guard against post hoc rationalizations. Also, interviewees are more likely to remember details about the work. Third, I sought to enact the idea of a chain of evidence through the whole study. In short, the data collection was guided by the research question and the findings emerged from the data. Fourth, I shared various mid-term reports and this report with company managers. This particular text was found to be very close to reality and likely to be useful in their future work. Fourth, construct validity also benefited from the interviewees being motivated to participate in the study (I collected feedback to improve the company's strategy process) and promised anonymity to the firm and to interviewees. As a final note, social desirability bias sometimes associated with the motivation is not an issue because the non-performance evaluating nature of the interview questions (i.e. please tell about how the process worked). To be sure, the interviewees discussed both problems and well-functioning aspects of the process freely.

Enhancing internal validity involves establishing that the proposed relationships are not simply spurious relationships (Yin, 2003). In this study I used explanation building in data analysis. Similar to grounded theory, my approach consisted of constant comparisons between data and emerging theory. I revised the theory several times as the analysis progressed.

From the perspective of external validity this study is grounded in the existing theory. According to Yin (2003) case studies should rely on analytical generalizations to theory instead of statistical generalization to

population as employed in survey research. In this study about the social activity of operations strategy creation the domain for generalization is a cross-section of theories about operations strategy making, social practices, and exploration and exploitation. Following replication logic, some of the findings receive stronger support as they are replicated over several embedded units of analysis.

Reliability is difficult in an inductive study where the analysis is iterative and there tend to be steps that "escape any deliberate sense-making strategy the researcher might decide to apply" (Langley, 1999: 707). However, I used five tactics to improve reliability. First, I sought to document the progress of the study in memo writing. This helps to follow the steps taken. For instance, the first step would be to familiarize oneself with operations strategy research and theorizing on social practices and decision making. As the second tactic I used interview guides to ensure that all main themes were covered in each interview. I expect that another investigator could have found similar results even if not exactly same. Third, I tape recorded all the interviews to capture the data more accurately. Fourth, the field notes were composed from two researchers' separate notes, which reduces note-taking omissions. Last, another researcher who had participated in data collection reviewed my analysis and agreed with my conclusions.

Last, in order to be reflexive, I tried to identify potential influences of how I as the researcher shaped the results. My theoretical sensitivity is certainly one aspect: an investigator with different theoretical lenses might have focused on very different constructs and produced different theory. Second, I have limited practical experience from industry. Some of my researcher colleagues have extensive management experience and are thus able to notice connections that I would not notice. On the flip side of the coin, I would likely be able to observe things that more experienced people might take for granted. Third, my educational background (Finnish high school, a master's degree in engineering) is similar to many of the people working for the case company. On the one hand, it was relatively easy for me to understand them. On the other, an anthropologist, for instance, may have noticed rather different things than I. Overall, I felt that the interviewees considered me a young member of their profession while also a representative of the university. The answers I received came across as honest and detailed.

4. Practice-based description of the development of strategic intentions

This first analysis chapter describes the operations strategy creation work from a practice perspective. I use the "three P's" framework (Whittington, 1996, 2006) - *practitioner*, *practice*, and *praxis* - to organize empirical evidence and my reading of it into descriptions. The first two sections provide an overview of what kinds of practitioners were involved and what type of practices are reproduced in the operations strategy creation work. The third P, praxis, refers to the situated activity. The descriptions of each team's praxis form the bulk of this chapter.

4.1. Practitioners

Operations strategy practitioners were the organizers and the participants of the strategy process. The organizers were those who arrange, manage, and own the strategy process. The participants included team leaders and team members. In the 2011 process the additional role of team coach was defined by the organizers. However, in the 2010 process a similar arrangement was made by placing the members of the operations functions' management team in the strategy teams as members. Table 5 contains an overview of the participants and their organizational backgrounds.

Table 5 Strategy practitioners in the case

Role in the strategy process	Year	Persons	Organizational roles and functional background
Organizers	2010	2	Operations development, senior operations management
	2011	5	Operations development, senior operations management, corporate strategy development.
Team leaders	2010	8	Operations managers
	2011	10	Managers involved with the order-delivery process from manufacturing, sourcing, logistics, installation, sales, R&D, and process & tools development.
Team members	2010	62 * (7-8 / team)	Initial participants from a newly reorganized manufacturing function (e.g. factory managers, quality managers, manufacturing engineering managers). Representatives from other related functions (sourcing, R&D, installation, process & tools development) were included in the second round. Each team included a member of the manufacturing function's senior management team.
	2011	62 * (4-9 / team)	Representatives from manufacturing, sourcing, logistics, installation, sales, R&D, and process & tools development.
Team coaches	2011	10	Senior management from manufacturing, sourcing, logistics, installation, sales, R&D, and process & tools development.
	2010	-	

* Planned participants as listed in the kick-off slides (any additional members included by the teams during the process are not included)

Organizers

The organizers are the people who arrange the strategy creation process. This small group of people includes senior operations management and experts from operations development and corporate strategy development.

Team leaders

Team leaders manage the strategy work done by the team. They are managers with different organizational backgrounds, such as manufacturing, logistics, or sourcing.

Team members

Team members participate in the team work. They are either managers with expertise on a specific topic, or young employees considered as showing high potential. Team members bring various functional perspectives to the work.

Coaches

The role of a coach was introduced in the 2011 process. They are senior managers whose role is to guide the team leader and to bring a senior management perspective into the team.

4.2. Practices

I conducted the analysis of practices by going through the data and identifying what people did. In this study I define practice as a "social, collectively shared type of understanding and behaving" (see page 30 for discussion). Therefore, as I was the one identifying the practices, these are practices that are social and collectively shared by a group that includes me. My analysis resulted in five categories of practices that the practitioners engaged in to create operations strategic intentions. Table 6 is an overview of the categories, including the detailed practices. Appendix B contains additional examples from data.

Table 6 Observed practices

Category	Description of category	Practices
Analyzing	Gathering and synthesizing information to be used in the strategy creation	Business environment analysis, SWOT analysis, gap analysis, internal and external interviews, stakeholder surveys, brainstorming, internet searches, and reviews of existing information (e.g. metrics data, development project status reports, six sigma black belt studies).
Preparing the communicatio n of strategy	Enhancing the communicability of the strategy	Use of PowerPoint templates (e.g. one-slider, gap analysis slide, strategy roadmap slide), 2x2 matrices, discussions on how specific words communicate,
Making decisions	Determining and influencing the content of strategy	Editing work-in-progress strategy slides, suggesting changes, expressing opinion or perspective, and voting
Collaborating	Enabling people to work together on strategy	Online meetings using teleconferencing service and screensharing tool, face-to-face meetings, one-on-one discussions, file sharing by Sharepoint or email attachments, kick-off events, and workshops
Organizing	Organizing the efforts of the people to develop a strategy	Team topic definition, guidelines for strategy work, scheduling, team composition

4.2.1. **Analyzing**

Analysis activities collect and refine information that is used in deciding the strategy. The practitioners gathered information and ideas through interviews of both internal and external stakeholders, surveys, brainstorming, internet searches, and by searching for and reviewing existing materials. For example, one team used a six sigma black belt study to support their strategy proposals. Much of the information came from the participants' own knowledge. Both formal and informal analysis techniques were used to extract relevant information and to combine it with information from other sources. Analysis activities were central in the participants' descriptions of how they created the strategies. For example:

> "So we started by planning the approach, we did this kind of phasing, we first took a look at the operating environment, the overall strategy and where we are

currently. From these 3 packages we started to see where we should be in future. [..] From this to-be state we identified the gaps and moved on to actions that would fill these gaps" (Team B leader)

4.2.2. **Preparing the communication of strategy**

Much of the work prepared the communication of the strategy. In broad terms, this category consists of two kinds of actions: synthesis and preparation of PowerPoint presentations. Referred to as "crystallization", discussions often involved finding good expressions that would capture and communicate the intended strategy. These discussions involved carefully weighing the connotations of specific words and the possibilities of undesired consequences. The following exchange from a review meeting illustrates this:

Organizer: one comment, this third bullet over there about future state.. [sales unit] orderbook should be rather [GMM] orderbook or one orderbook. I would like to get away from this separate orderbook way of working in these strategy.
Team leader: I completely agree. How to do it in practice is another thing, but we should have that stated here.
Organizer: I think strategy should say clearly that we should get rid of it. If we don't say it out loud, then we have slim chances getting there. And it is one of the root causes to our problems.
(Review meeting, Team A)

Another type of preparation for communication took the form of creating and using PowerPoint templates. For instance, the organizers provided a "one-slider" template for teams to use in order to make it easier to gain an overview of the team's output. The presentations not only displayed information but also provided support for the strategy statements. For instance, some teams constructed box and arrow diagrams that visually connected their action proposals with the overall strategic intent of operations. Many teams used the company's strategy presentation templates to visualize and possibly legitimize their plans. As an example, many teams presented their action roadmap using the very same template as the overall corporate strategy uses.

The challenge of finding good expressions that would communicate this strategy to others outside the team was reflected by one of the team leaders in following way:

"In my opinion the challenge is, I repeat, how to communicate this well inside GMM. I don't say now Operations, I say GMM, because you like or not, this interfunctional ... umm ... work. Without the help of other function we risk that this is a very nice exercise but it remains this sort of theory. Ok... but now I think the challenge is the communication. So this slides for communication,

how to spread this message inside different GMM organizations. [..] basically I'm thinking for example when CEO was coming to GMM. I still remember that ... the strategy at the time was just communicated in one sentence. 3 extremes.. very, very clear. Very shocking, let's say. How to find this similar message, no, for this strategy that would be really reaching.. could reach the heart of the people, no?"(Team I leader)

4.2.3. **Making decisions**

The actual decision making actions were incremental. The strategy content shaped through a series of small decisions. These decisions were edits to the work-in-progress slides, suggestions for changes, expressions of opinion, and, in a few rare cases, voting. For example, consider the following excerpt from a team meeting. While much of the discussion involves gathering materials and finding right wordings, the team leaders' act of editing transforms the consensus into a strategy statement.

Team leader: Ok, another question.. what does [that operational priority] mean in our case?
Team member: From a [sales] project manager point of view, it's about getting what I need.
Team member: I think it's about having a group of [offerings], it's not about having everything available at last minute but rather in plans.
Team leader: Can we say what these need to be? In my understanding we don't have clear requirements available
Team member: Customer is bit distant..
Team member: One should be that we should have better view at [GMM], one from [a major on-going development program]
Team member: I will still like to some form of standardization there, being an engineer. So it's not a limitless number of [offerings]
Team leader: What would be the correct term?
Team member: I don't know about correct..
Team member: what about portfolio?
Team member: Yeah, portfolio
[Team leader adds "standardized portfolio of [offerings]"]
(Field notes from Team B meeting, May 2, 2011)

4.2.4. **Collaborating**

Collaboration practices enable people to work together to create strategy. Teleconferences and screen sharing tools enabled online team meetings and also larger events such as the kick-offs where all participants were invited. In addition to online meetings, the teams also held some face-to-face team meetings. Network drives allowed participants and organizers to access the teams latest work-in-progress slide sets and update additional materials for other participants to use. Both the 2010 and 2011 processes concluded with

two-day closing workshops, where the teams' work was discussed and synthesized towards a single strategy. As a new activity, the 2011 process included mid and final review meetings wherein the organizers provided feedback to each team.

As an example, the Team B leader describes the use of sub-teams:

> "We had agreed that those sub-streams have leaders who will then invite these sub-streams or sub-teams with three to four persons into a meeting. For each meeting they will need to be prepared so that we have often a template that these will be the things we will discuss, and that it would be good to think about them, and please fill in your suggestions there." (Team B leader)

As another example, Team G utilized three separate workgroups in the early stage of their work:

> "We had these work groups in [Asia] and [Europe]. We had work groups with one, the [Asia] one, looking mainly at factory perspective. And then at the [Europe] end they took the product development perspective. And the third workgroup was from field organization perspective. There was sales and marketing. So these three perspectives started quite quickly… so the work groups got started and produced results already during the first weeks" (Team G leader)

4.2.5. **Organizing**

Organizing practices organize the work of the participants in creating strategy. Organizers and team leaders engaged in common organizing activities, such as creating schedules for the strategy process with deadlines for deliverables. Organizing at the beginning of the strategy work involved the organizers creating the teams and assigning them topics. These actions decomposed the overall task of creating an operations strategy into smaller sub-tasks that the teams could complete. Resource allocation via the selection of participants into team leader and team member roles was another important organizing action. As an example, I have outlined the 2011 kick-off slide-set in Table 7.

Table 7 Structure of the 2011 kick-off slide set

Slide #	Description of the section
1	GMM template title slide
2	Overview of contents Lists section titles, slide repeated at the beginning of each section.
3 - 7	Section title: [Operations] Aspiration Description of the overall strategic objects for operations and linkages with corporate strategy
8 - 16	Section title: "Strategy streams, stream leads, and team members" The section begins with overview of teams and their topics, displays a schedule for team work, lists team leader and coaches and team members for each time.
17 - 28	Section title: "Guiding questions for each stream" Section contains 1 slide for each team. The slides contain questions the teams could answer to get started with analysis. Some of the slides contain also background information or ideas for the end-state. The first slide of this section notes "Note that questions on the following pages act as thought starters. They highlight selected important topics that should be considered by the team".
29 - 34	Section title: "Potential structure of the end result" This section contains three slide templates for presenting the results and general guidelines. For instance: "Shorten the sentences, use concrete words" and "Challenging, actionable, clear, realistic, convincing"
35 - 36	Section title: "Next steps" This section offers 5 bullet points as guidelines for teams on how to get started and deliver the results in the next 2.5 months.
37	GMM template end-slide with logo and corporate strategy mission slogan

4.3. Praxis

To describe each team's situated activity, praxis, I used the narrative strategy (Langley, 1999) to organize the data into process descriptions of the development of strategic intentions. These descriptions typically begin with the initial organizing activities such as topic definition and team composition. The descriptions of the teams' work follow the team leader's own description from the interviews. As a particularly important element regarding exploration and exploitations, each narrative includes an account of the sources of ideas from which the strategic intentions were built. Located towards the end of the strategy process, I have also included observations from the review meetings and their influence on the development of the strategic intentions. Finally, each narrative concludes with a description of the strategic intention developed.

4.3.1. **Praxis of Team A**

The topic of Team A was to review and update the strategy for a sub-process of the order-delivery process. The task also involved plans for implementing new capabilities towards which much of systems development was already ongoing. The team leader characterized the overall task as a matter of improvement:

> "I suppose the guiding questions were how the current process works and how it should be improved so that it would meet the business needs" (Team A leader)

The team was composed of people who were involved with the sub-process in different geographical areas. Manufacturing, sales, and sourcing functions were represented. The team leader's background was in managing the sub-process at the global level and the coach was the process owner of this sub-process.

Following the advice of the organizers in the kick-off meeting, the Team A leader put together a structured plan for how the team was to accomplish their strategy creation task. First, the team leader and the coach drafted an objective for the future. The objective draft was then discussed in the first team meeting. The rest of the work was structured around the guiding questions from the organizers. The team leader describes the process in following way:

> "We built a kind of path where we split the topic to 10 pieces [guiding questions] and drew arrows between them [...] some things must go parallel and others must sequentially.[...] So we tried present this to the group as a logical whole for the process and tried schedule it. It gave us a structure for weekly work. So in one piece per week, we had an opening meeting, then subgroup work during week and finally next week consolidating our shared perspective to the topic. And then assigned the next piece. So we built it piece by piece." (Team A leader)

Progressing in the rhythm of weekly meetings and analysis tasks, the work involved aligning the different perspectives of experts with different functional backgrounds. Often quite detailed in level, the discussion was largely about sharing information and understanding the topical sub-process and its effects in different parts of the organization. The ideas were brought in by experts who had been working on the topic for a long time before the strategy process.

> On the analyses: "We used different kinds of fact as basis. [...] We already had data processes that gave us data. Then we also discussed with our [internal stakeholders] about their challenges and needs. [...] That's how we tried to understand the current situation in the light of the data. During that work we defined certain goals as well." (Team A leader)
> On actions for the [existing parts of the sub-process] "They are pretty clear as they had been felt as problems already for a long time in the organization. We have a very strong understanding that this is in a grim state and needs to be fixed. So in that sense defining practical actions did not cause us great pains... Actually this applied for many of these things. So things that have been nagging in people's minds for a long time.. so they were easy to put on the table. And

> then when we discussed them we concluded that these are indeed the practical things that need to be done. The practical challenge is scheduling and resourcing." (Team A leader)

In the mid-review meeting with the organizers, the team leader and the team coach went through a set of about 50 slides. The majority of the time was spent in presenting the materials and discussing the details. During this discussion the organizers sought clarifications for themselves and for the strategy slides to communicate the ideas better. In two cases the organizers suggested specific adjustments to strategy statements.

On a few occasions the organizers tried to push the team to think more broadly. The first example comes from team leaders' introduction to the work. Here one of the organizers challenges the team's approach in leaning heavily on the initial question in structuring the work:

> Team A Leader: "So here we started with. In our initial meeting we provided our team this schedule and main work areas and built a sequence of tasks as a logical continuum of work. This was tied to the questions in the kick-off material. So we fitted these into that frame and time line."
> Organizer: "Ok, this is Organizer, so maybe one comment. In kick-off material the questions idea is to get started, but not to limit your thinking. What we aimed was to establish a picture of what would world class [sub-process] for [GMM] so just trigger and not limit."

In the final review meeting, the discussion revolved around the action roadmaps from an implementation perspective and the strategy statements from a communication point of view. The team was asked to clarify the interdependencies between planned actions and related development efforts. The discussions on the wordings of the key messages were rather collaborative brainstorming. Together the team leader, the coach, and the organizers considered the meanings associated with specific words and tried to come up with words that would capture the intentions best.

The outcome of the strategy creation work carried out by Team A is a concrete plan for "how this works in 2014" and how to get there. Although the new capability and associated process will require some mindset changes according to the team leader, overall their work was consolidating and integrating existing perspectives into a development plan. The planned actions build heavily on on-going development programs. The strategy creation work and the outcome are best characterized as collecting and refining existing ideas for continuing process improvement:

> "The [strategy work] was sort of grounding of organizational frustrations and development ideas into the strategy" (Team A leader)

4.3.2. **Praxis of Team B**

Team B's work involved a strategy for a sub-process that had a pre-existing strategy from 2010. In the kick-off material their topic was marked for reviewing and updating. Additionally, the team was to plan the development of a sub-activity that had not been managed particularly systematically in the past. Outside the strategy work, the Team B leader had been recently assigned to manage and develop this sub-activity. Overall, the team understood their task as the creation of development plans for the topical sub-process that would take the firm towards its strategic goals. The team leader described this in the following quote:

> "One of the starting points was to look at what were the [overall] objectives in the kick-off and we tried to think how we could advance that in our area. For example, so that [lists some of the overall goals] are realized. And from there we started to do our part" (Team B leader)

Team B was composed of representatives of the functions that are involved with the sub-process. These included sourcing, logistics, process development, and sales. People managing the sub-process in different geographical areas were also included.

Together with the coach, the team leader structured the strategy creation work with weekly meetings and work packages that contained analysis tasks:

> "So we started by planning the approach, we did this kind of phasing, we first took a look at the operating environment, the overall strategy and where we are currently. From these 3 packages we started to see where we should be in future. [..] From this to-be state we identified the gaps and moved on to actions that would fill these gaps." (Team B leader)

The majority of the work was arranged as two sub-streams divided into the overall sub-process and the specific sub-activity to be developed. For the weekly work packages, the team leader and a sub-stream leader put together questions and templates, which they then sent for the participants to fill in. Based on this offline work the sub-stream would first consolidate their thoughts and ideas on the work package. Next, these would be presented to the entire Team B and discussed together.

Team B based their strategic intentions on a shared understanding about current operations development needs rather than deriving them from a vision statement. For Team B, vision statements were about summarizing and communicating the message with one or two sentences. Although they

did given some thought to vision statements early in the process but did not make much progress thereafter:

> "Well that vision… it actually came as the last thing. So we did start more from that.. from what we saw are things that we need to improve, to develop and how that will be done. When all these were thought then it maybe lead to [the question] that what is the one sentence that summarizes this our development direction… so we didn't even start… of course many probably started the other way around so that they had first this higher level vision towards which they then tried to build their actions. We started from [the fact] that we need to improve in these sectors quite a bit and then took a look if we can summarize some vision that would be a rainbow (sic) for all these our development things. So that's where it maybe diverges from what could be the approach of some other teams." (Team B leader)

The meetings constituted largely the discussions on the work-in-progress strategy slide set. In these discussions the team members mainly drew on their expertise and knowledge of the current state of operations. The team leader edited the slide set as the meeting progressed. As a more specific example, the analysis of the external environment was conducted by utilizing prior knowledge and talking with a couple of colleagues:

> "We had few members whom we gave topics related to for instance technology, world economic situation, competitors, and few other things… so they just by themselves thought and asked from few stakeholders, few colleagues and bit from outside about views that do you have any ideas about what will happen in this sector and what will influence us. So we thought about it by ourselves and asked from few person outside the team." (Team B leader)
> Follow up question: "So, you didn't use any analyses from external parties or that sort of things?" (Author)
> "No, not really. Of course people do follow these things as part of their work so it kind of comes through that way. But we didn't order anything for this work." (Team B leader)

The face-to-face workshop that Team B held near the end of the process was a major boon to the work. The team leader attributed the progress in the workshop to it being much more supportive for debating and collaborating than teleconferences. The main content of the workshop was to finalize gap analysis and plan actions that fill the gaps between as is and to be states. The actions plans came largely from the knowledge and experience of participants:

> "Well… it probably that… I really can't describe it but the people with whom we exercised this knew pretty well that we have some kind of problem and a gap and then is it that we need change some process some way or is it that we need to change our information systems some way or is that we need to develop

> some product or something else… and when we talk on this topic level that some process change will be implemented in the USA or something similar so then it came directly at the meeting because these people really represented different competences about [subprocess] and so someone always had knowledge, or even many had, so that we could put it down on the paper. We didn't go into those projects at the depth it would have required [to actually plan the project] but just commented and discussed." (Team B leader)

The mid review with organizers focused largely on refining the work-in-progress slides for communication purposes. A significant part of the discussion between the organizers focused on exchanging information about the details of the sub-process. The organizers also provided suggestions for the team to consider, such as combining bullets or providing more details. In the following example Organizer challenges the word choice of a specific to-be statement:

> Organizer: "Automatization. Coming from my side this looks like we are working without direct operations people but information flow is the key?"
> Team B leader: "I think both systems and communication between people should be considered. Standard processes with little human communication but in exception management then communication is key."
> Organizer: "Maybe automatization is not correct word. This automatization is about fully integrated and bringing not only visibility but greater clockspeed. Maybe automatization not the right word here, seems too technical which is not the case here. But this is…"
> (Team B mid review)

As an example of strategizing, the organizers criticized the lack of vision guiding the work:

> Organizer: "Very comprehensive list. Now understand it better. When looking to the strategic intent that you have listed and will come later. But should it be vice versa and the vision should exist. Looking at the environment and what competitors are doing. Looking how we can differentiate, where we are in 3 years. So where we need to be and then we can crystallize key points that drives to that. But which then is making the big change in the end. Very good list and lot of content but really small steps we are improving one by one."
> Team leader: "Definitely agree with you. Overview diagram or something should be created that describes the key drivers and underlying assumptions in the work and where we want to be. Should crystallize in one."
> Team Coach: "This crystallization is what needs to be done within the next month or so or Organizer?"
> Organizer: "I agree. I think it would be good to have the vision to drive the change. Again, there's a lot of work done. We need this one slide with key point about what we really need to achieve in this logistics are."
> (Team B mid review)

Slightly refined to follow the organizers' comments, the resulting strategy document consisted mainly of existing development efforts. Some projects involved new capability development. The team leader answered our question on to what extent the output is incremental improvement:

> "It's very much this. There's no radical changes of direction. […] It's more about improvement than really solving problems." (Team B leader)

4.3.3. **Praxis of Team C**

Located in the second phase of the 2010 strategy process, the task of Team C was to continue work on a sub-process strategy. The team was composed of experts working on the sub-process. It involved managers responsible for the process in different geographical areas, development managers, and managers in other functions that interface with the sub-process. The team was an international and cross-functional group of experts who all work on the sub-process.

> "Yeah, well… in this second phase the idea was specifically to collect these experts into the same team to continue the work from where January… from January where this mixed team had left it… so in January they had collected a group of people who are not dealing [logistics] with this topic and now we continued from that.. in practice there's quite a limited number people working on logistics at [GMM] and it was fairly easy to select the people into the team." (Team C leader)

The work was carried out in weekly team meetings and sub-tasks to be completed in between. Due to scheduling difficulties in arranging meetings, the team leader decided to begin by listing on-going development actions

and seeing whether they are aligned with the overall operations strategy. Later, the team moved to discuss more abstract vision statements for the sub-process.

> "During the first weeks we had to do lot of the work outside meetings, so we started by listing on-going actions and from there we rise to the next level what tactics they support and from those link to the strategy statement and then start iterating downwards again." (Team C leader)

The team leader's choice of approach was not accepted without reservation. As the strategy creation work was something that most participants had not experienced before, there was little shared understanding about what kind of strategy the team should create. The team leader saw their work as extending and implementing the higher level strategies:

> "And then we also did a kind of check that which of our strategy statements support this [Operations function] strategy definitions and then…well.. there were these differences in opinion with team members that are we really going to do an own strategy for logistics and distribution. As someone who has studied these things, I think strategy should be company level thing and that we are doing operations strategy is ok as long as it adds to the [GMM] strategy. But if one is making own small strategies even under that, then we are going to too detailed level and getting little too much variance and I think at this level we should focus on these tactics and actions with which we support the upper level strategy." (Team C leader)

The output was a development plan for the next three years. Some of the actions were on-going development projects, some were solutions to current problems, and one was a new idea. However, the team had difficulty in listing concrete actions under the new idea and it remained on a more abstract level.

> "I would think that there's a very comprehensive picture for the next three years. Those contents will definitely change a bit, as I said some of these are bit new and we don't really know what they will contain at detailed level." (Team C leader)

4.3.4. **Praxis of Team D**

Team D was a team in the second phase of the 2010 strategy creation process. Their task was to continue where the non-expert team of the first phase finished. Their main task was to develop a manufacturing strategy into concrete action plans.

> "We spent a few days getting in touch with people explaining the task for the second step which was the action plan development. So if in the first stage we were generally speaking about strategy content in terms of direction that

> [GMM] should have in manufacturing area in order to improve the actual situation we were moving into the details of the action plan to develop in these next three years." (Team D leader)

Team D involved people from all continents. Given the task of creating manufacturing strategy, the majority of the participants came from the manufacturing function. In addition, representatives from R&D and sourcing were included. The team leader was a factory manager from Southern Europe.

> "Team selection first, we picked people from different areas for example we selected people working in engineering activities, I actually have two persons that are in charge of process engineering activities, we've been involving people from quality, from production management, from controlling so from the financial areas as well because of course we were trying to be as concrete as possible with these action plans. Umm… Let's say this team was also composed of two external team members, one from the sourcing structure and another one from the R&D or what we call key technologies area." (Team D leader)

The strategy creation work was structured into sub-tasks that pairs of participants worked on. The team leader arranged on-line meetings where the work-in-progress was shared and other members could comment on it. Although the Team D leader would have preferred a more interactive process, he selected this approach due to time constraints.

> "Of course all the process was teamwork meaning that what I've tried to do with the team was to involve as much as possible or the team members in the decision making process so was working as external facilitator, not having any kind of predefined plan how to proceed. And this was I would say a very good way to help people to come out with their proposals and to let them feel really involved in this strategy development process." (Team D leader)

Building on the first phase outputs, the team identified four key actions early into the process. These were based on on-going development efforts and known improvement potential. The bulk of the strategy creation work was to refine these actions towards concrete action plans. For instance, the team put effort into ensuring that the action plans were feasible for all plants of the manufacturing networks.

> "I mean that I am aware that there is potential to reduce the lead time, at least from my view point. From this discussion we had with the other team members it was clear that the potential is there and what we did as it was possible to do that was to get in touch with the customers to understand if the customers were perceiving this possibility. We didn't really organize an interview process because this was done already from the previous team what we were experiencing was a spot check with the customer that were confirm that lead

> time is from their view point a sort of criteria to decide between different proposals, I mean from the competitors." (Team D leader)

Other than assigning the task, the organizers had very little interaction with the team. The team leader saw the benefits behind this organizing approach:

> "That was technical training specifically to this tool, so as facilitator we didn't get real training or tools related to strategy to be used and the idea here was, how to say, not to drive the process but to let people find their own way to drive it. So once more, be innovative with this process." (Team D leader)

The resulting actions plans were very concrete and as detailed as the task was. Many of the actions would bring incremental improvements to the current situation. One of the action areas also had potential for improving competitiveness in the longer term:

> "there are actions that are very detailed, I was previously mentioning this timing for the production activity, … of course a sort of tool to help to improve the situation will lead us to the excellence, the manufacturing excellence which our last …our goal for the future. But, if I must consider an action that on long term, will create a difference, a real difference then this lead time is definitely one of those actions." (Team D leader)

4.3.5. **Praxis of Team E**

The task in Team E was to reach a specific performance improvement in a sub-process. The improvement would help the company become the best-in-class for this sub-process. The team understood it equally straightforwardly:

> "It was [performance improvement in an activity area], it was quite straightforward." (Team E final workshop representative)

The process in Team E involved both team meetings and off-line tasks. Organizers' kick-off instructions were used to plan the approach. This is how Team E's representative describes how the work started:

> "The team leader did some as-is situation analysis as pre-work by collecting on-going actions and metrics data. Team members were sent a questionnaire to vote on where to start." (Team E final workshop representative)
> "We have this kind of checklist…we went through all the items in order to get the expected outcomes.., all information about sharepoint uploading, as-is situation, listing subquestion, big item identifications,.. we had clear guidance." (Team E final workshop representative)

As an analysis, Team E's strategy creation was about applying and refining existing processes. Local differences in different geographical locations

were a particular challenge for the topical sub-process. Strategy was developed through gathering and analyzing existing processes and information from various locations:

> "I didn't want to reinvent the wheel.. let's say processes are repeating.. every 6 or 7 years similar processes come up just slightly modified. So here we are focusing on what is existing and how can we modify it. Ok, we have also some new items." (Team E final workshop representative)
> "It was challenging to get information from different [geographical] business areas, so we first concentrated on [one business area]." (Team E final workshop representative)

The resulting plan for achieving best-in-class performance is a plan for improving existing capabilities. It provides adjustment and alignment:

> "we have really broken it down on what they need to do [to achieve best-in-class]." (Team E final workshop representative)
> On not reinventing the wheel: "We have to highlight that we have really good processes but we just need to modify them slightly to achieve something." (Team E final workshop representative)

4.3.6. **Praxis of Team F**

The first step of this team's leader was to redefine the topic given by the organizers. The old task was to leverage a specific existing capability in a new area. The new task was to develop a plan for a radical performance improvement that would make the company more competitive in a specific business area. The new task had strong support from the business owner as it addressed one of the major pain points. Dubbed as the "[Competitor] legend", a particularly persuasive rationale came in the form of an anecdote told by a customer whom a major competitor had offered a significantly better performance level than the industry standard. The new task was also the basis for selecting and inviting team members:

> "And, since we have a sort of pretty clear picture of what it is that we need to focus on and that way it was quite easy to identify these key persons from different functions [of GMM] whom we then invited into this group." (Team F leader)

The work began with a kick-off meeting for the team where the team leader introduced their redefined task to the team. Due to the time pressures the team leader felt that the best way to progress was to conduct one-on-one discussions with team members and other internal stakeholders. The team leader took the role of consolidating the findings. These discussions were followed by two meetings where the ideas were adjusted and clarified. The mid-review with organizers took place between these meetings.

To use the team leaders' words, the analysis work of Team F is best characterized as "turning every stone". The one-on-one discussions between the team leader and the participants focused on identifying improvement potential in different parts of the process as well as ideas for possible solutions. The ideas for capturing the improvement potential were found largely from within the organization:

> "this is not the first time we are trying [to solve the problem], so we went back to those and took a look if the previous efforts produced the desired improvements and if not, then what went wrong and what should be done so that we could reach a better result." (Interview with the Team F leader)
> "In some aspects, for example manufacturing, we realized that the current manufacturing ideology does not enable [the radical performance improvement]. So we started thinking about a to change this manufacturing." (Interview with the Team F leader)

In the mid-review the team leader presented their first draft to four organizers. The organizers became excited about the radical performance improvement idea of Team F:

> Organizer: "[…]… but if we look at the scope where we are in business perspective what is meaningful, where would those need to be?"
> Team leader: "Difficult to say but might be possible to [improve 50%]…"
> Organizer: "[50% improvement] is already definitely a step change. That's one way to look at what's possible. Other angle is what would be industry best practice in 3 years time with what would be required to drive competitors out of the market and set that."
> (Team F mid-review)

The mid-review meeting continued in a brainstorming mode where the organizers challenged current ways of working and proposed ideas for extending the team's vision even further. The team leader and coach participated and built the ideas even further with their knowledge about the topic area. These ideas resulted in additional information search tasks for the team leader and clarifications to the slide set.

In the final review the organizers were very satisfied with the work:

> "I think this strategic intent is good, what needs to be done, good starting point. Another good point that is that slides focus on actual point of intent, [performance]. Pick up [performance] as the thing and slides focusing on that. Straightforward and simple set of slides. I think positive thing, makes also understanding and communication easier as clearly said. That's great. What there might be still is this summarization and crystallization, so what are these

3-5 bullet points where this all boils down to. Then I think it is there." (Organizer in final review)

Team F's strategic intention is a radical performance improvement. The work stems from a current challenge and is expected to help the company capture more business and stay competitive.

4.3.7. **Praxis of Team G**

Participating in the task definition, Team G was to adjust a sub-process in order to capture unutilized potential. In the past, the company had begun to implement a new general concept to running this sub-process. Although the right activities were in place the company did not see the expected results. The objective of the strategy work was to figure out how the general concept should be applied and what kind of actions would be needed to do it. In this case, the problem and its solution was something that the participants had been thinking about prior to the process. The strategy work offered an opportunity to develop it further:

On the initial topic: "We did not adjust it, because we were already part of creating it. It was this kind of pain point which was not something coming from the moon but seen as potential." (Team G coach)
On the need to change: "It was very clear to everybody." (Team G coach)

The team was composed of people from manufacturing, R&D, and sales. The team leader was a quality manager who had also worked in R&D in the past. The team composition was mainly carried out by organizers:

"It was given. There were some partial changes made, but Organizer had already defined who belongs to which team. Then Team G coach, who leads R&D, with him we thought about it. There was some small changes but nothing big. It was mainly Organizer's view." (Team G leader)

One of the first steps was to arrange three separate workshops so that each had a different functional perspective focus on the topic. These workshops provided a significant quantity of material, including action ideas and criteria for how the general concept should be applied.

The core team continued the work and held an on-line meeting every Tuesday. In these meetings the team discussed the findings from individual tasks done between the meetings. As an example of a task, the members interviewed other internal stakeholders. This way both utilized the team members' expertise and worked actively to challenge it by looking for alternative ideas.

> "We have done a kind of break-down structure, giving everybody a task what to check, what to search, and together we reviewed the ideas" (Team G coach)
> "All those guys have done this many times. So the idea was to take the experience and challenge the experience." (Team G coach)
> "Well, we had this weekly collaboration meeting where we together went through all the things we had found. I then tried to collect them into this presentation format and then we together thought about how to modify them. It was this weekly thing. Then we also had that face-to-face meeting that I believe was held in the end of May where we gathered at [a Hotel] and spent a day together looking at what we had achieved and what needs to be done." (Team G leader)

Although the overall goal was clear from the start, much time was spent on developing vision statements. Much of the effort went into crafting visions into something that can be realized. The team leader thought it was good that they spent the effort in it. As described by the team leader, the vision development was collaborative:

> "It really started from us trying to understand what we want to be so that we are better than the competitors and what things we then need to influence. And we listed and elaborated these … on a flip chart and then of course in these presentations… so these kind of words and themes that we'd need to realize. Then we played with them and identified which are important for us. We also voted a little bit about it. And then… well when we listed quite many visions, I think there was a total of seven of them … so in the end we all.. I can't really call it voting but we together thought about it and came to the conclusion that one of them was above all or at least very slightly better and then we chose it." (Team G leader)
> "On what made that one vision better: It was really about how we want to position ourselves in the world markets or in the world. Or on the other hand when I first told that we had pretty clear goals when we knew where we were and what we wanted … so that those are also told clearly in the vision. In that sense if those goals are clear then it is quite easy to work on the vision even though it takes time. Of course then there's that such vision which is fairly short and then tries to be understandable also for English speakers so then we did adjust those wordings many times." (Team G leader)

Selecting few enough actions to fit into a one slide strategy was a challenge. Many of the action ideas came from the three workshops that each represented a different functional perspective of the sub-process. Although the workshops had produced a prioritization of the action ideas, much work remained for the core team in combining these lists. The consolidation and filtering was accomplished by recognizing similarities in ideas and simply prioritizing the ones that the team deemed most important. The team leader made notes using mind maps for organizing the ideas:

> "They were mostly things that came from inside [GMM]. Of course there were lots of similarities when there were three groups thinking about it, so there are many of those that are just said differently. For that we created this mind map thing where we collected everything together and then grouped same things in same category and so on." (Team G leader)

The mid-review consisted of discussion about the current application of the general concept and some brainstorming about how to implement it properly. The meeting ended with the organizer evaluating Team G's progress against a set of guidelines:

> Organizer: "Ok, what kind of strategy output is good: (1) as is based on fact finding, not claimed opinions but based on analysis, feet on the ground on where we are today, (2) this vision: this topic what would be industry leading in 3-years strategy time scope, what would make a difference in performance, (3) general terms, what kind of direction [GMM] needs to take to make the vision happen. Add concurrency to the conclusions, I agree with this strategic direction, (4) list of strategic actions (projects, programs) what need to be done in 3 years to reach the strategic direction.
> These four things are "nice to have" and what is expected but then great if team looks at strategic actions, capabilities, projects but also who, what functions, time line, sequence of steps that needs to be taken, deliverables for projects and programs. Put this all in one page. The whole key is to crystallize this, so you are then having 30 seconds time to explain."
> Of course other slides to back up. This is the most difficult part. Rather compromise 5 and 6, crystallization is the key so do that. Currently the key message does not pop up.
> So those 6 points are characteristics of good output for strategy streams.
> If I think of this one, analysis and fact finding. These strategic statements about time-to-market etc. You could bring up vision. You have a bit there in generic terms but could capture in more details, where KPIs exactly need to be, so put more thinking there. Strategic direction was there. For fourth point little more work is needed. And do 5 if you have time.
> This is my interpretation where you are now, any other views?"
> Team Coach: "Your picture is good. We still have things to do, especially crystallization."
> (Team G mid-review)

In the final review the organizers were satisfied with the output. Some discussions took place about wordings, e.g. changing "industry benchmark" to "industry best" because "benchmark" can also mean a cautionary example. Another topic discussed was the question of finding resources for the proposed actions.

The resulting strategic document was a roadmap for addressing the challenge and capturing the potential. The plan was expected to produce

incremental improvements in the short term and a radical change in the long term:

> "We have this kind of , you have seen the roadmap, of what could be implemented tomorrow and what needs to have little bit time." (Team G coach)
> "Yes there are incremental items, but also a step change" (Team G coach)
> "We are really aiming for a clear change. If we think about this [activity] then some of the actions are clear process changes that will lead to a fairly large overall change. These activities of course exist today but here… the goal is to get a much better result from these activities in shorter time." (Team G leader)

4.3.8. **Praxis of Team H**

The topic of Team H dealt with manufacturing strategy and more specifically the application of lean manufacturing methodology. The company already had some success in applying the basics of this improvement methodology but more advanced aspects were yet to be implemented. Here the focus was on thinking how the methodology should be applied in order to realize the more significant benefits of the methodology throughout the global manufacturing network. Although they were guided to focus on the lean methodology, they gave some thought to the overall manufacturing strategy as well.

> "If we look at [activity] strategy, it's kind of large area. But the question was already guided a bit to this … there was lean in the topic so that guides this work to the lean direction. But we tried to think about the overall strategy also." (Team H leader)
> "Also that task assignment said that these lean … that what this thing is in the end for us. We do have this lean program that we have now couple of years practiced these basics like 5S and others have been done and people know what they are. Now we should kind of like how we could get the big advantage from lean to our operations… like realized.. so that how could we get from this reactive firefighting mode which often is and from this batch production mode … how to get to these flow production in reality and not just on powerpoint." (Team H leader)

Matching the topic, the team was composed of people from different manufacturing sites. Some of the members were general managers of the plants. Team H's leader was an operations development manager and an expert in the improvement methodology. He was located in Asia.

Team H did the strategy creation work through a series of team meetings. The team leader assumed an active role for the preparations in between the meetings. He put together slides containing ideas and proposals, which the team members then commented on in the meetings. During the meetings he took notes from the discussion and recorded them together with his own

thoughts on the slides. The team wrapped up the work in a face-to-face meeting where they clarified their messages and finalized the output slide set. The active role of the team leader worked well for this team:

> "Opening the line and waiting for ideas does not work, but you need guide it to a direction and then hopefully someone in the group can direct it to a new direction or stop it if there's something silly. At least for us it worked." (Team H leader)
> "[it was done in] the team meetings, and I collected the points together, consolidated the slides from those. So that's how it developed. In the face-to-face meeting we then condensed it." (Team H leader)

As the focus was on a widely applied manufacturing improvement methodology, the team gathered and reviewed experiences from other companies including competitors. For instance, some ideas came from a improvement study carried out within the company. An equally important part of analysis was to understand the differences between sites of the manufacturing network. This knowledge was needed to put together applicable proposals.

> "Of course we are not the first company in the world trying to implement this, so there's experience to be found and of course we took a look at what competitors are doing." (Team H leader)
> "About these different locations, one person can't know it all but having people from different places know their specialties and ways of working. So that's how it comes together." (Team H leader)
> "The discussion sometimes produced comments why this [idea] can't work or there's a better way to do it." (Team H leader)

The reviews with organizers helped to find the strategic messages. Team H's leader started the final review presentation with a commented version of a slide from the 2010 manufacturing strategy. The organizers reacted by wondering what it was doing there. In preparation for the final workshop, the main comment was to work on the messages. In the interview (held after the final workshop) Team H's leader told that it was not until two weeks before this workshop that they started to find the strategy. The reviews were particularly helpful in preparing the communication of the strategy:

> "Well, Organizer… Organizer doesn't really, he said it himself, he doesn't know much about this topic but he was pretty good as this neutral commenter and crystallizer. This kind of guy that it would have been good to have in the face-to-face workshop just so that he could have adjusted the structure and as an outside person could have commented that is this understandable.. does he understand what this is trying to say… maybe that's the biggest value of such

> commenter.. not necessary expecting any [improvement methodology] secrets from him but how… how the strategy needs to be presented so that it sells and works. Same.. well Another organizer … he gave maybe more comments about emphasis.. like don't forget this product or something … like professional comments.. he knows production planning and control. Good comments for that." (Team H leader)

The result of Team H's strategy creation work was a plan for realizing more significant benefits from lean methodology. The plans involve clear changes to current ways of working and efforts to instill a new type of culture. The expected benefits should be notably larger than those already gained from doing smaller continuous improvement:

> "Yeah, probably the majority of the factories in the world and we also quite a bit are in this reactive mode so that it's often firefighting trying to keep the daily production running and getting goods out and what feedback comes… its then kind of quality issues but like … how could we change the operations to this lean style direction. Little bit more aggressively, so how would that be possible." (Team H leader)

4.3.9. **Praxis of Team I**

The task of Team I was to think about how customer requirements could be better addressed in the design of the order-delivery process. In addition, the organizers had provided a list of questions to help the team to get started.

> "Our team.. was this stream 1, was basically to..umm..to study [process design]. Then give ..basically.. taking into account customer requirements. So this was basically the main target. And … also to look at the [process design principle] that was, let's say, one part of this process. So how basically… to ..umm… setup a process to serve our customers, that is truly ..umm.. voice towards their needs, their requirements in terms of lead time, in terms of logistics, in terms of delivery process. So this was the task of our team." (Team I leader)

The team was cross-functional with people from manufacturing, sales, after sales services, and different customer information teams. The team leader was the factory manager of a Southern European plant.

> "And the team was composed of people with different background. So people coming from [operations function], people coming from [Sales function]... so working sales. People also from services. People working at global level in customer experience team. So it was, let's say, interfunctional team where we had really different competences from different people. And I have to say that it very good setup for this point of view because we were really looking mostly to the customer. So to have these people with this kind of experience for me was really important strength of this team." (Team I leader)

The work began with a kick-off meeting which was followed by team meetings and a face-to-face workshop to finalize the output. In the kick-off meeting the team utilized a set of questions provided by the organizers to distribute the work into tasks for individual team members. Here the team came up with an idea to invite various internal experts to come in to the team meetings and tell about what they do in interacting with the customers. The team members shared the results of their tasks in these meetings. Towards the end, the team held a face-to-face workshop to condense their messages into a short enough presentation for the final workshop.

> "Yeah, there was a good list of questions that was already .. umm.. already prepared by the people who we're organizing this .. this.. strategy workshop. So ..this was really the first touching point. And if I remember correct, there was about nine questions. So following each of these questions during this kick-off meeting, we said ah ok.. with this question let's try to do this and you could be the right person. And this question could be the right question for person y. And this question could be right question for person z. And so on. So basically, following this tracks .. these tracks of questions were allocating the tasks according to the strengths of these same people with right competencies for performing." (Team I leader)
>
> On the kick-off meeting: "During this discussion was coming also the idea to have a sort of.. to extend the team. [...] And they also provided to have a lot of additional material. So, let's say, there was core team but also extend the team with other competences that were coming later after deeper analysis of the task that we were doing." (Team I leader)

In this team the most salient aspect of strategy creation was information search. The team meetings were places for visiting experts to tell about what they do and for the team members to share what they had found in doing their sub tasks. The strategy proposals were developed by consolidating various ideas and recommendations that emerged during the meetings. Here are a few examples of search activities:

> "For example, one task was to understand the [customer] segment and of these team members was taking basically the responsibility to find the materials,

> interviews customers and so on in that particular segment. Then we had also the task to get better knowledge of the [process design principle]. Making really the state of art of literature point of view. So we had person who was looking to this. Then we had another example that was related to the competitor information. So we had another person who was taking this responsibility to provide this material and also to contact the competitor intelligence team. And then having them to extend our team. So this kind of tasks." (Team I leader)

In the final review the organizers pushed for concreteness. The review began with the team leader presenting their slide set. During the presentation the organizers ask for more information. One specific dialogue involves aligning 'to be' states with the 'to be' states that the other teams have been planning. At the end of the presentation the organizers, team leader, and coach discussed possibilities to make the strategy proposals more concrete. As a part of this discussion, the organizer suggested improving the slide set:

> Organizer: "Somehow good stuff in appendix but slide set is so heavy that they are lost. Maybe proposal could be that in the beginning when you are listing content related to supply chain services, already add comments from customer, concretely what it means and even go back to customer. E.g. [GMM] documents are too heavy."
> (Team I final review)

Team I ended up proposing fundamental changes to the organization with regard to the order-delivery process. In addition, they offered more concrete and short term recommendations for more efficient use of existing resources. For this team the communication challenge is particularly important given the need for broad changes across the organization:

> "In my opinion the challenge is, I repeat, how to communicate this well inside [GMM]. I don't say now [Operations], I say [GMM], because you like or not, this interfunctional ... umm ... work. Without the help of other function we risk that this is a very nice exercise but it remains this sort of theory. Ok... but now I think the challenge is the communication. So this slides for communication, how to spread this message inside different [GMM] organizations. And I have to say also... a another ... umm.. challenge that is ... how to.. umm... to say that these message we have directing ways of the people. I don't know if you understood, but basically I'm thinking for example when [CEO] was coming to [GMM]. I still remember that ... the strategy at the time was just communicated in one sentence. 3 extremes.. very, very clear. Very shocking, let's say. How to find this similar message, no, for this strategy that would be really reaching.. could reach the heart of the people, no? But really impress, like I don't know.. John Kennedy '68 standing by name of this thing.. so it was '69.. very big

[picture] of the moon.. ok... so, something that is clearly going to the heart of the people that is really creating some emotion." (Team I leader)

4.3.10. **Praxis of Team J**

Composed of order-delivery process owner and sub-process owners, Team J was tasked to explore a new process design principle. These fundamental changes to the order-delivery process had been under discussions for a while already. The Team J leader felt that their task was to integrate other teams' outputs and create a longer term vision for the operations.

"If we still put it so that our task was to.. as I imagine it our task was to group and see these bigger wholes. In these [strategy creation] streams they have solved excellently very acute problems, even small ones. Or brought in good solution proposals. Now it's important that these... kind of findings are placed on a reasonable time line that what we'll do." (Team J leader)

The strategy creation work relied more on interaction than on a scheduled structure of work packages. However, some structure did exist in the early phases where the team leader interacted with team members one-on-one to get early inputs. This preparation phase was followed by meetings where the ideas were developed through discussion. The rationale for a team leader centric early phase process was the practical difficulty to get everyone together at the same time.

"Our people move around a lot, so we started with everyone doing a small part by themselves and then putting it together." (Team J leader)

Although exploring a new process design principle, Team J did not start from scratch. Due to the team members daily jobs in process design they all possessed a large body of knowledge and ideas. Half-jokingly the team leader described that they have ideas on the shelf for the next 10 years but not all them are applicable to today's technologies, processes, and products. The strategy work was more a question of selecting a couple of ideas and developing them a bit further.

> "Well, we had no shortage of material. After all, we do this for living. The challenge was to find the main topics to focus on. And it started from like I said that.. Team J Coach in the order-delivery process owner role had guided us in thinking how we will present this thing to management which was completely separate from strategy work but we then just combined these. So what is coming in the future and we utilized quite a bit of what we have done and what is already being planned. From those we ended up making those big.. what are they.. big one, two, three headings that we focused on." (Team J leader)

Nevertheless, there was a kind of discovery involved in how big their ideas would be and that it could be possible to realize:

> "It cleared to us pretty quickly that our ideas are so big that if they work out, we could show up in the workshop with one slide" (Team J leader)
> "this is something that we'll do now. The time is right for that." (Team J leader)

In this case the origin of the new process design principle was traceable to a benchmarking event. Part of a major product development program, this event featured external consultants who brought in best practices and applicable ideas from other industries. The team leader and one of the team members were among the event participants. There they realized an operations development opportunity that future product development could enable:

> "Of course, this [big idea] is nothing new. We just upgraded a slide that was created maybe a year ago. We have been part in the origins of [a product development program] and seen the new potential products and what opportunities they open up. The idea was born there already and now it has been refined in this strategy" (Team J leader)

A more short term aspect of Team J's work was to clarify order-delivery process variant categories. The current process categories did not match the actual activities very well, which caused problems. The process owners that made up Team J knew this well and had been thinking about possible solutions. The solution was included in the 2011 strategy because of the other teams:

> "We did know it all long but when everybody writes down the same thing with bit different words you realize that now is the right time to do something about this." (Team J leader)

The mid and final reviews resembled working meetings rather than review presentations. Much of the time was spent brainstorming with the organizers. Especially in the mid review, the team members would frequently edit the slides to capture the ideas emerging during the discussion. A second important function of the review meetings was for the

organizers to relay information from other teams and suggest people to contact. Team J members even managed to task the organizers to keep them updated on Team I's progress. In sum, the review meetings served to clarify the messages and align Team J with other team's work-in-progress.

The outcome of Team J's strategy creation effort was a vision. The implementation of the new process design principle meant significant changes in how operations capabilities are utilized in delivering products and services. One step in this long implementation process was changing how people view the order-delivery processes. Clarifying and communicating process variant categories was one the steps to this directions. Moreover, implementation is also a matter of practical constraints and development efforts:

> "You need to have courage to think, but you also need to keep your feet on the ground." (Team J leader)
> "In the end, it comes down to if we have the systems to do this. We won't be doing this with cross-ruled paper" (Team J leader)

4.3.11. **Praxis of Team K**

The task of Team K was plan the development of a specific activity within a process. Part of the assigned task was an input to figure out how to apply a specific improvement methodology to this process.

> "Task assigned to us was to create a kind roadmap [in activity] and to have a clear development strategy [for activity area]" (Team K workshop representative)
> "The input was coming from [internal stakeholder]... it was, for example, the input was [to develop activity area] to put in place structures for [improvement methodologies]." (Team K workshop representative)

The strategy creation work began with brainstorming for development ideas. These were further developed through individual assignments and team discussions. Overall, Team K held regular meetings and the team leader took an active role in synthesizing information and directing the work.

> "At the first stage we did brainstorming activities, so basically [team leader] told to think about which development activities to put in this strategy, then all the people did a list, then [team leader] analyzed the lists and selected the most valuable ideas and comments and then reassigned the task to the people to develop slides of the concepts." (Team K workshop representative)

From a content perspective Team K focused on building the capability to utilize the improvement methodology. They paid particular attention to the types of resources and routines needed. In this sense they focused largely

on implementation questions. The overall requirements came from internal stakeholders. A Team K representative described the work in following way:

> "We were adjusting and fine tuning those, but main concepts were coming from [internal stakeholder]" (Team K workshop representative)
> "to have a breakdown of the system [...] we were defining that these are what we need to perform in each of the areas to fully complete the capability." (Team K workshop representative)

In the mid-review the organizers main message was to emphasize the need to add more detailed description of how the improvement methodology would be used. They suggested that the team had focused too much on the organizational side of the capability. The organizers also suggested the team to contact internal improvement methodology experts. The following excerpt illustrates this feedback.

> Organizer A: "What I put in the email, so for those 4 big items that you've got it would be good to open up the 2014 situation and training should put so that what competencies we will have in this area in 2014. Little bit of wording but would communicate this better."
> Organizer B: "Yeah, describe the vision, so that where we are when our order-delivery process is at better condition than the competitors'. Add scope as the fifth item. How do describe the end result, the vision?"
> Team Leader: "Ok, we'll add scope and vision. You Organizer 1 spoke about competencies, but there's probably something more as well..."
> Organizer A: "Competence, capability, what we want to achieve"
> Team Leader: "Training is these [improvement methodology] techniques. Capabilities are created by more than technical skills. Leadership etc influences and that you have star players so that the overall level rises."
> Organizer A: "That's true, but training is perhaps not a high level item but an enabler for developing capability"
> Team Leader: "Perhaps capability is the word"
> Organizer A: "And what kinds of capabilities"
> Team Leader: "Point taken. Shall we move on?"
> (Field notes from Team K mid review meeting 20.4.2011)

The output was a roadmap for developing capability, including details such as organizational structures, skills, and systems. The expectation was that this improvement methodology capability would move the sub-process from reactive problem solving to proactive improvement:

> "This system we are aiming to implement, we hope it gives us methodologies to solve problem"(Team K workshop representative)
> "This will change quite much the actual way of operating... moving from reactive way to proactive way" (Team K workshop representative)

5. Cross-team analysis

In this cross-team analysis I develop analytical generalizations on how explorative and exploitative strategic intentions for developing operations capabilities are developed in the strategy creation activity. I begin with identifying the different kinds of strategic intentions and their explorative and exploitative characteristics. Given the centrality of search in the existing theorizing on exploration and exploitation, I next analyze how existing knowledge and search practices as sources of ideas enable the development of different kinds of strategic intentions. Last, I identify reasons behind the teams' actions that enable and constrain the activity. This cross-case analysis offers four patterns of using alternative sources of ideas in developing the explorative and exploitative strategic intentions. These patterns are effects of the organizer's organizing practices. Appendix C presents a team level summary of the cross-team analysis and examples from data.

5.1. The strategic intentions developed by the teams

The strategy creation teams developed a set of strategic intentions that contain both explorative and exploitative characteristics. However, for each team a particular type of intention was dominant. For instance, the majority of the intentions developed by Team A involve incremental improvements that either solve problems or bring further performance increases. Yet, Team A also developed a less central intention to develop a new capability. Therefore associating teams one to one with intentions is not perfectly accurate because each team developed more than one strategic intention. Nevertheless, associating team with the dominant strategic intention is possible. It is also necessary because later parts of the analysis are at the team level.

Based on my analysis of the interviewee's descriptions of the teams' output, I identified five broad types of strategic intentions to develop operations capabilities. Listed in Table 8, these intentions to develop and change the operations have explorative and exploitative characteristics.

Table 8 Strategic intentions developed by the teams

Strategic intention	Description	Type of intended change	Dominant for teams *(Additional intention)*
Refining and adjusting processes	Performance improvements, solutions to current problems	Exploitative	A, B, C, D, E *(J)*
Application of a new process design principle	Major changes to the order-delivery process architecture in the long term	Explorative	I, J
Radical performance improvement	Incremental improvement in the short term, radical improvement in the long term	Both exploitative and explorative	F
New capability development and implementation	Implementation of a new operations capability that brings performance improvements and competitiveness	Both exploitative or explorative, emphasis varies	K *(A, B)*
Capability transformation	Major changes to a current activity or capability, radical performance improvements in long term	Both exploitative and explorative	G, H

5.1.1. Refining and adjusting processes

The strategic intentions to refine and adjust processes consist of statements of goals and action plans that continue on-going development and improve the performance of existing capabilities. Typically, these strategic intentions involve a broad roadmap of improvement actions. For instance, Teams C and D created development roadmaps that built largely on on-going and planned development actions. In the case of Team A the development plans addressed a major organizational pain point that caused problems and lower performance. On the other hand, Team B's and E's intentions were more about further improvement than problem solving.

The following quotes describe how the participants viewed the resulting intentions:

> "There's no radical changes of direction. […] It's more about improvement than really solving problems." (Team B leader)
>
> "The [strategy work] was sort of grounding of organizational frustrations and development ideas into the strategy." (Team A leader)

5.1.2. Application of a new process design principle

The strategic intentions are to apply new process design principle outline changes to the overall architecture of the order-delivery process. These strategic intentions also contain more specific changes to some of the sub-processes. For example, Team I's proposals intend to improve the company's ability to win customer orders with a new way of configuring the order-delivery processes. Team J's intentions were more long term. Team J

planned fundamental changes that were expected to produce new opportunities for radical performance improvements. These improvements, however, were left to future development programs to realize. Here is how the Team J leader describes their output.

> "As I said … we may get in a tight spot when [we present the results] on Thursday and Friday [in the final workshop]… so we did start to vision something overly broad and have 17 topics here… also because of the time limitation we have focused on one, two, or three main topics. So… clarifying these delivery process definitions and … it's sort of… sort of feet on the ground hard work. But now the time is right and now it will be done. So it's something that we'll do here and now. Then the second point which is this new [principle] for the order-delivery process… so that is then something that must begin and something that we lay foundation for now. But it will be concrete in one to two years. So from just these two ideas we will have work for tomorrow and to the end of the strategy period." (Team J Leader)

5.1.3. **Radical performance improvement**

The strategic intentions to achieve a radical performance improvement consist of set of actions that are expected to have a significant impact on the firm's competitiveness in a specific market. In the case of Team F, all of the actions aimed at improving a single key dimension of operations performance. Team F left no stone unturned and created a plan that involves both incremental improvements and changes to the current ways of working. The Team F leader describes the intentions:

> "Yeah, everything won't be scrapped by no means. But rather..like.. For those areas where we saw that the current model doesn't… doesn't cut it and can't yield the results we look for .. so for those areas we ended up proposing radical change. But then if the current model works and we see that we reach the goals by improving the current model, then we decided to keep it." (Team F leader)

5.1.4. **New capability development and implementation**

The strategic intentions to develop and implement a new operations capability involve goal statements and action plans detailing new processes and resources needed such as employees and equipment. The strategy of Team K detailed the new capability and a roadmap for implementing it. Teams A and B included the implementation of an on-going new capability development as additional, minor intentions. The following comments from a Team K member reflect the expectations for the new capability.

> "This system [the new capability] we are aiming to implement, we hope it gives us methodologies to solve problem." (Team K workshop representative)
> "This [new capability] will change quite much the actual way of operating… moving from reactive way to proactive way." (Team K workshop representative)

5.1.5. Capability transformation

In contrast to implementing new capabilities, there are also strategic intentions to transform existing capabilities. These intentions involve non-incremental changes to a specific capability. In the case, Teams H and G deal with an existing capability that is not performing to its potential due to the limited application of the concepts behind the capability. The resulting plans involve a series of changes and improvements that enable the company to achieve the expected performance out of the widely known concepts. The following quote from Team H illustrates the intention to transform capabilities:

> "lots of small improvements, but if we wanted… these strategically signification actions that would have a… like.. a bit bigger impact. So those we would want to find. So.. how to grasp those. We know that competitors have reached these with certain actions and so how we could get similar [impacts]." (Team H leader)

5.1.6. Conclusions: Explorative and exploitative characteristics of the strategic intentions

These five categories of strategic intentions describe the kinds of sub-strategies developed under the overall operations strategy. The categories are distinct in terms of the actual content of the strategic intentions which was the basis of the categorization. However, in terms of exploration and exploitation there is some commonality between the categories.

The purely explorative intentions are the intentions to apply a new process design principle. Their explorative nature stems from the fundamental changes and the expected radical performance increases. The strategic intention of Team I in particular, implied capturing new business. However, Team J proposed more immediate and concrete changes that would also address current problems. In this sense, Team J's intentions also contained exploitative elements.

In the case of strategic intentions to *transform capabilities* and to *develop and implement a new capability,* explorative and exploitative characteristics depend on the details of the change. In the case of Team K, the new capability helps to move a specific sub-activity from a reactive problem solving mode into a proactive improvement mode. This change is expected to influence competitiveness by increasing operational performance which characterizes the strategic intention as exploitative. In

the cases of teams H and G, the plans involve significant transformations to existing capabilities and aim for radical performance improvements. Thus, these intentions are explorative. On the other hand, many of the detailed actions are also a short term improvement, which constitutes the exploitation element for the intentions of teams G and H. Furthermore, in the case of Team H, some of the main competitors are already further along in the application of the lean methodology, which makes the intention less of exploration to capture new business and more of exploitation to hold on to existing business.

The intentions to *refine and adjust processes* and seek *radical performance improvements* are fundamentally exploitative. Although the planned actions of Teams A, B, C, D, and E were not purely incremental improvements, the expected effects were not radical nor did they change the direction of the development beyond improving alignment with the overall operations strategy. Team F's intention to improve performance radically takes exploitation to such an extreme that it becomes exploration by setting a new performance standard in the market.

This section of analysis develops a link between operations strategy and exploration and exploitation as characteristics of strategic intentions. I summarize these links below as the first three conclusions from the analysis. Further, because each team had a dominant strategic intention, it is possible to link strategy content with the team level of strategy creation activity. I develop these linkages in the next analysis sections.

Conclusion 1: Mainly exploitative characteristics are present in strategic intentions to refine and adjust processes.

Conclusion 2: Mainly explorative characteristics are present in strategic intentions to apply new process design principles.

Conclusion 3: A mix of exploitative and explorative characteristics are present in strategic intentions to seek radical performance improvements, to develop and implement new capabilities, and to transform capabilities.

5.2. Sources of ideas and knowledge

Here I focus on where the ideas and knowledge for the strategic intentions came from and how those sources were utilized in developing explorative and exploitative strategic intentions. Early in my analysis process, emerged two primary sources of ideas: the knowledge enters the teams' work either as existing knowledge held by the participants or as a result of search activity during strategy creation. Table 9 offers an overview of the teams existing knowledge and search activity.

Table 9 Sources of ideas and team composition

Team composition	Existing knowledge on the strategizing topic	Search activities reported as significant source of ideas (LS = local search, BSS = boundary-spanning search)	Team
Exploitative strategic intentions			
Mfg, sales, plan	Expertise on the topic, experiences from prior attempts to solve a major problem	-	A
Logistics, mfg, sourcing	Expertise and experience on what needs to be developed and how	LS: Talking to internal stakeholders, colleagues	B
Mfg, logistics, sourcing	On-going development actions, expertise and experience on the topical sub-process	-	C
Mfg	Expertise and experience, knowledge of improvement potential	-	D
Sales, inst.	Expertise and experience with both current and past processes in the topic area	-	E
Mfg, sourcing	Expertise and experience of the sub-process	LS: discussions with internal experts	K
Both explorative and exploitative strategic intentions			
Mfg, sales	Expertise and experience of the process to be improved	LS: Internal surveys, collecting lessons learned through interviews	F
R&D, mfg, sales	Understanding of the problem and the kind of change needed, brainstorming for alternatives	LS: Internal workshops, internal interviews	G
Mfg (different plants)	Experience from different plants, expertise with the improvement methodology	LS: Internal studies BSS: Benchmarking visits, gathering other companies' experiences with the improvement methodology	H
Explorative strategic intentions			
Senior operations managers	Little existing knowledge on the new process design principle	LS: Internal experts giving presentations to the team BSS: Customer interviews, literature searches	I
Process owners	Broad expertise and understanding of the processes, previously developed ideas	-	J

5.2.1. **Existing knowledge as a source of ideas**

Many of the ideas stem from the existing knowledge of the participants. By existing knowledge I mean what each person has learned before the strategy work. Existing knowledge used in creating strategic intentions involve elements such as ideas, solutions, information, past actions, best practices, problems, etc. According to the interviews, existing knowledge was the *main source* of ideas for Teams A, B, C, D, and J. For example, Team A was addressing a major problem that had already seen past solution efforts. That experience was available to the team:

> "We had also people who had tried to do something but didn't progress then. So there was concrete experience. So it was very clear." (Team A leader)

As another example, Team J participants had first developed their big idea during a benchmarking workshop during the previous fall:

> "Of course, this [big idea] is nothing new. We just upgraded a slide that was created maybe a year ago. We have been part in the origins of [a product development program] and seen the new potential products and what opportunities they open up. The idea was born there already and now it has been refined in this strategy." (Team J leader)

The existing knowledge available to the team depends on who participates in the strategizing activity. In a typical team meeting these people are the team members or a subset of them due to scheduling difficulties. In the review meetings this group is expanded to include the organizers. I use the team composition to approximate the existing knowledge.

The team composition is mainly a result of organizers' activity but the team leaders did also invite additional team members. A frequently mentioned idea was to include experts. In this context an expert is a person who has plenty of specialized knowledge relating to the topic of the strategy. For instance, logistics managers know much about the details of running the logistic processes of the company. Similarly, the sourcing managers responsible for logistics service contracts know about the current and possible future logistics partners. These people were thus the sub-process experts for the team planning logistics strategy (Team C). The focus of Team J was on overall process design, and thus the experts were the process owners. Team I was an exception as it was composed of a diverse set of senior operations managers who did not necessarily know much about the topical process design principle.

5.2.2. **Local and boundary-spanning search activities as sources of ideas**

Search activities produce new knowledge for the participants to use in creating strategic intentions. Research on exploration and exploitation differentiates between *local search* that remains within organizational boundaries and *boundary-spanning search* that crosses organizational or industry boundaries (Gavetti et al., 2005; Katila & Ahuja, 2002; March, 1991; Rosenkopf & Nerkar, 2001; Stuart & Podolny, 1996). Search activity was a significant source of ideas for five of the teams (Teams F, G, H, I, and K).

The local search activities included discussions and interviews with internal experts and stakeholders, workshops, internal surveys, and analysis of metrics and information systems data. For example, Team G

started their work by holding three larger internal workshops to gather ideas. Team F conducted an internal survey and collected lessons learned in order to turn every stone towards a radical performance improvement. Blurring the lines between search and existing knowledge, Team I invited internal experts to visit and give the team a presentation on a topic that the team felt they needed to understand better.

The boundary-spanning search activities involved interviews with customers, supplier surveys, benchmarking visits, and literature reviews. For example, Team I needed more information about the new process design principle in order to understand how to apply it. They crossed organizational and industry boundaries by searching for literature on the topic that they could utilize. Team I also interviewed some of their customers to understand the implications of new kind of processes. Similarly, Team H worked on applying a well-known operations improvement methodology. They crossed industry and organizational boundaries to benchmark other companies applying the lean methods. Additionally, they collected participants' experiences from visiting other companies in the past. Used as a much less significant source of idea, Team D crossed the organizational boundary in conducting a supplier survey to gather feedback about current processes and thus identify improvement needs.

5.2.3. Conclusions: How existing knowledge and search practices enable the development of strategic intentions

My analysis suggests that search activities are not directly related to the explorative or exploitative characteristics of strategic intentions developed in an operation strategy creation activity. Rather, we must consider both search and the existing knowledge of the team. The existing knowledge of the team depends on team composition. I summarize these simple observations as conclusions on the sources of ideas:

> **Conclusion 4:** Knowledge enters the operations strategy creation activity either through search activities or is brought in as existing knowledge of participants
>
> **Conclusion 5:** Team composition determines the existing knowledge of the team

The development of strategic intentions with explorative characteristics is enabled by knowledge of both current operations and boundary-spanning knowledge. For example, Teams I and H searched for information from literature and from other companies in order to apply the process design principle or the manufacturing improvement methodology (Team H). Naturally, they also relied on existing knowledge to determine what is

feasible and what is not. On the other hand, the process owners in Team J had a unique body of existing knowledge to utilize. By virtue of their daily jobs, the team members participated in various boundary-spanning activities, such as a major benchmarking workshop held some months before the strategy process. On the other hand, by participating in various operations development projects they also had a strong understanding of the practical constraints. In contrast, Team I had little knowledge about the process design principle that was their topic, while having a strong understanding of operations. Thus Team I was very active in both local and boundary-spanning search in order to develop their strategy proposals. Decoupling search from exploration in the operations strategy creation context, I conclude that the development of explorative strategic intentions is enabled by the kind of knowledge available to the team:

> **Conclusion 6:** Together, the knowledge of current operations and boundary-spanning knowledge enable the inclusion of explorative characteristics in the development of strategic intentions

My analysis suggests that the development of exploitative strategic intentions is enabled by knowledge of current operations alone. Again, I decouple search. Teams A, B, C, D, and E created strategies that refine and adjust processes by utilizing existing knowledge. The proposals were constructed from on-going development actions, planned projects, and previously tried solutions to problems. The Team E leader sent the participants a pre-work questionnaire that produced a priority listing of issues to focus on. All of these five teams drew on the experience and expertise of the participants to build strategy proposals. In the case of Team K, the participants had a good working understanding of what the new capability was supposed to achieve and thus they focused on planning the implementation. They utilized their own existing knowledge and conducted interviews with internal stakeholders to work towards their goal. Although the team was composed of sub-process experts, none of the team members had experience of the capability they were preparing to implement. In the light of the actions of Teams J and H, boundary-spanning search would have been possible but Team K developed the strategy without it. Thus the following conclusion:

> **Conclusion 7:** Knowledge of current operations enables the inclusion of exploitative characteristics in the development of strategic intentions

Finally, the case of Team F does not fit the above propositions relating to the enablers of developing explorative and exploitative strategic intentions. The explorative nature of Team F's strategic intention towards radical

performance improvement stems from turning every stone to pushing improvement to the extreme. In the next section I expand on the influence of the organizing practices on the teams' choices to develop a particular kind of strategic intention. Team F continues to be an exception in that analysis.

5.3. Reasons for action

This analysis section focuses on why the teams developed the specific kind of strategic intention. The previous section provides a partial answer: because they were enabled by existing knowledge and search practices. The second part of the answer is to understand what constrained (and also enabled) the teams with regard to the specific strategic intentions. Last, as Giddens (1984) suggests, an analysis of strategic conduct requires an account of motivation to understand how people cope with enabling and constraining aspects of the activity.

I consider a basic motivation that I observed in the strategy creation: the motivation to complete one's tasks. In my interpretation this motivation was central in the case. Literature suggests that opposite, self-interested motivations may also be present (Guth & MacMillan, 1986). In this case I did not come across such subversive objectives. For instance, in the final workshop the atmosphere relaxed (e.g. audience had good laughs every now and then) and professional (e.g. my field notes suggest that people listened and made suggestions on how to improve the work). However, given the uncertainty about true motivations, I choose to view my interpretation about the motivation to complete tasks as an assumption and therefore a possible boundary condition for the findings.

In this analysis section I focus on the reasons for action. According to Giddens (1984) people follow their motivation in choosing from the set of possible actions. The set of possible actions consists of what the person and others consider sensible in the situation. In this way the social nature of practices enables and constrains action. In this analysis I seek to describe here how the reasons for developing specific kinds of strategic intentions are affected by organizing practices (see analysis section 4.2). Table 10 summarizes the teams for this analysis section.

Table 10 Alignment to the strategizing task and the daily concerns

Topic definition	Orientation of topic (rephrased topic)	Orientation in daily job (based on team composition)	Search	Characteristics of strategic intentions	Teams
Teams primarily guided by the daily concerns of the team members					
Open topic		Exploitation		Exploitative	A, C, D
Open topic		Exploitation	LS	Exploitative	B
Teams where the strategizing task and the daily concerns are aligned					
Defined topic	Exploitative (How to improve this process?)	Exploitation		Exploitative	E
Defined topic	Exploitative (How to implement this capability?)	Exploitation	LS	Exploitative	K
Defined topic (Redefined by team)	Exploitative (How to support current business?)	Exploitation	LS	Both exploitative and explorative	F
Defined (Participation in topic def.)	Explorative & exploitative (How to transform this capability?)	Exploration and exploitation	LS	Both exploitative and explorative	G
Defined (Participation in topic def.)	Explorative (How should processes be transformed?)	Ambidextrous		Explorative	J
Teams primarily guided by the strategizing task					
Defined topic	Explorative (How to apply a concept?)	Exploitation	LS, BSS	Both exploitative and explorative	H
Defined topic	Explorative (What would a concept mean for us?)	Exploitation	LS, BSS	Explorative	I

LS: Local search, BSS: Boundary-spanning search

5.3.1. **Completion of the strategizing task and the influence of the topic**

The strategy creation work was a task to complete. At the start of the strategy process, the organizers assigned the strategy creation teams topics on which to work. This basic organizing practice accomplished the division of the overall strategy creation task. The team's task was further defined by schedules and guidelines set by organizers. The completion of this strategizing task was a strong motivation guiding the teams' actions. For example, the Team D leader found it necessary but not fully desirable to prioritize task completion:

> "On one side I didn't like the idea of sub teams because this was of course splitting the activity and creating a sort of a barrier between the team members but on the other side it was necessary because the need of a developing a concrete action plan. So it was really too difficult to work altogether according

> to the time schedule we had on the list of actions we were discussing about. So on one side we focused on being effective with the time and the schedule of activities on the other side trying to any way to facilitate to communication process between team members." (Team D leader)

Similarly, the Team A leader noted that they had to make compromises in order to make progress in the strategizing task:

> "We understood in the beginning that the strategy statements we put in place the probably would not be the final ones. Because of that we did a draft version and said that this is good enough for this situation and guides us to the right direction. And understood that when the process moves forwards we probably will return to the statements and refine them. They we're good enough to get us started. We couldn't pause there forever to think about some objectives because otherwise this would have never progressed. And that's what we did… clarified the objective in the end. It was also clarified in the final workshop and also in the mid-reviews with the organizers." (Team A leader)

Albeit located within the same strategy process, not all strategizing tasks were equal. The open topic of Teams A, B, C, and D were defined as simply strategizing on the sub-process level. For instance, Team C was to create a "Logistics & Distribution Strategy" (kick-off slides of the 2010 process). Teams E, F, G, H, I, J, and K received a much more focused task. For instance, Team H was to figure out how a manufacturing improvement methodology could be better applied in the company. The key distinction is the extent to which the topic was defined or left open.

Given the motivation to complete the strategizing task, a defined topic constrained the strategizing to specific strategic intentions. For example, because Team H's topic dealt with applying lean methodology, it would not probably make sense for Team H to look for opportunities for improving the installation process. Instead, Team H's topic required boundary-spanning knowledge on how the best performing companies apply lean. In contrast, more open topics left more room for the team to attend to other motivations.

I further differentiate the defined topics in terms of their explorative and exploitative orientation. For confidentiality and brevity, I have rephrased the team topics from the kick-off slides in Table 10. Some of the topics were exploitation oriented. For instance, Team E's topic called for process improvements and Team K was assigned to implement a specific new capability. Other topics had exploration orientation. For example, Team I was to figure out what a new concept would mean for the company. Team G's topic to transform an existing capability had both explorative and exploitative elements to it. I will return to this more fine grained classification of topics in chapter 6.

5.3.2. **Completion of the organizational task and the influence of team composition**

The daily tasks in managing the current operations were also a part of operations strategy creation. In contrast, prior research suggest that an important function of strategy workshops is to distance strategists from the current organization (Hendry & Seidl, 2003). Only in the case of Team I were daily concerns pushed to the background. The meeting and review observations show that the discussions often go to a very technical level. For example, a discussion of supplier integration involves a discussion of enterprise-to-enterprise information system integration standards and their use in the supplier base unless the systems development costs would outweigh the benefits of integration (Team C). The completion of the organizational task constrains the development of strategic intentions.

Attending to the current organization also enables operations strategy creation. At a minimum, the actions plans needed to be feasible. Even Team J, who developed explorative strategic intentions, stressed the importance of grounding the plan to a current situation and that the time was right for their plan. Furthermore, in the light of experiences from the 2010 strategy process, the Team B leader felt that teams composed of key experts was necessary for the team to work:

> "This is my personal opinion, but I think that the depth, content, and outcomes are on completely different level when someone who has thought and developed this [activity] for three years thinks about the strategic future, so there is a completely different depth and content. Of course it is good and excellent that these streams work a bit together and then perhaps include some other experts into the work. But like.. the core is those who have the extreme knowhow about it and they then develop it onwards and then someone comes from an adjacent stream to bring in some [cross-functional perspective] or some technical constraint, if I take these extremes. Then we are moving forwards in completely different manner. So the all-embracing approach… even in the case of such long-lived expert organization such as [GMM] so… quite little… for example this year we have gotten more already half-way through … so much more kind of more accurate and in-depth content." (Team B leader)

The concerns of daily tasks were most prominent in Teams A, B, C, and D, which developed plans to adjust current processes. The primary sources of ideas were on-going development efforts and major problems. In the case of Team C, one team member argued that people had simply listed things they wanted to be developed from the perspective of their daily job:

> "those [actions] came from the participants' expertise and experience. The starting point was current daily realities and the needs that been identified, not so much strategic goals as we didn't know what they were. There are, after all, a

> plenty of development projects already prepared and agreed on. So, the starting point was easily that we have these principles, let's take systems integration or sourcing principles, that are part of our daily life and those were not questioned. [...] So, we did not take advantage of the opportunity to rethink these fundamentals." (Team C participant)

The concerns for the daily organizational task present in the team depend on the participants and their functional background. From the organization design perspective, the case company fits the description of architectural ambidexterity (e.g., Duncan, 1976; Tushman & O'Reilly, 1996). The exploitation activities of operations are separated from the explorative activities of R&D by organization structures. Using functional background as an approximation for orientation, the majority of the teams were exploitative. Team G involved participants from both exploitative (manufacturing and sales) and explorative functions (R&D). Team J consisted of process owners who I characterize as ambidextrous in the sense that their work is both to plan new development efforts and to realize them.

5.3.3. **Conclusions: Enabling and constraining influences of team composition and topic definition**

There was familiar tension between the completion of the strategizing task and the concerns of the daily organizational task. On the one hand, each participant had their daily organizational concerns in mind which would need to be addressed. On the other hand, the strategy creation task was also about planning longer term improvements. Here, tension was amplified by the limited time resources available for the strategizing work. This is how the tension between exploration and exploitation (Andriopoulos & Lewis, 2009; March, 1991) manifests in the operations strategy creation context. However, the teams aligned themselves with one or both of the tasks (Table 10).

An open topic enables and constrains the team to focus on developing intentions that are aligned with their concerns in their daily work. Teams A, B, C, and D are composed of people whose daily job is associated with exploitation activities of the company. Their open topic *enabled* them to complete the strategizing task by focusing on the concerns of their daily job. For example, they could list on-going and already prepared development projects as strategy proposals or solve nagging problems in the operations.

> **Conclusion 8:** Open topic enables the team to align with the concerns of the daily organizational tasks in developing the strategic intentions

A defined topic enables and constrains the team to focus on developing intentions that are aligned with the strategizing task regardless of the team

composition. In Teams E and K there was no contradiction between the defined exploitative topic and the exploitation oriented team composition. Teams F, G, H, I and J were *constrained* by their task: the teams would fail to complete their task if they did not develop intentions to transform capabilities (Teams G and H), radical performance improvement (Team F), or to explore a new process design principle (Teams I and J). The relationship was also *enabling* as the focus on the defined topic allowed Teams I and H to put daily concerns aside and allocate time to boundary-spanning search. Therefore:

> **Conclusion 9:** Defined topic enables and constrains the team to align with the strategizing task in developing the strategic intentions

Last, the cases of Teams F, J, and G show that participants also influence the topic definition. The Team J leader and Team G coach interacted with the organizers before the process and helped to define topics that were also the concerns for them in their daily management work. Team F was a rare exception in the sense that they redefined their topic to better match a pressing business need. The result of the team's influence was to enable aligning strategy creation with their daily concerns.

> **Conclusion 10:** Participation in topic definition enables the team to align with the concerns of the daily job in developing strategic intentions

Overall this analysis section shows the enabling and constraining effect of the organizers' organizing practices on the team's strategy creation activity. The team composition determines the kind of daily operations management concerns that the team has. The topic definition activities influence the extent to which the team can align their strategizing with other organizational tasks. Teams with an open topic attend to the team members' daily operations management tasks. Teams with a more defined topic are more constrained to completing the strategizing task. The degree of tension between the two depends on both the specifics of the topic and the team's orientation.

6. A practice theory of the development of explorative and exploitative operations strategic intentions

My analysis has gradually moved from the detailed descriptions towards the identification of a set of concepts for building theoretical explanation. This section summarizes the findings and conclusions into a practice-based explanation of how and why explorative and exploitative strategic intentions are developed. To characterize my explanation in terms of Weick's (1979) dimensions for theory, I strive for good accuracy and moderate simplicity while accepting low generality.

The explanations relate back to the detailed descriptive analysis in chapter 4. Essentially, I simplify each of the three P's. First, I consider only two groups of *practitioners*: the organizers and the team. From the organizers' practices, I address two *organizing practices*: team composition and topic definition. The team draws on existing knowledge and *search practices* to develop the strategic intentions. For the simplified account of *praxis*, I synthesize four distinct patterns of developing strategic intentions in the case.

The patterns of praxis show the joint effects of topic definition and team composition practices. Together the two organizing practices influence the level of tension between the strategizing task and daily organizational tasks. The two tasks and the tension between them determine knowledge requirements for completing them, and team composition determines existing knowledge available to the team. This knowledge gap influences the amount and type of search the team needs to engage in. Figure 3 is an overview of the patterns, and the teams they are based on.

		Orientation of the team (An effect of team composition practice)		
		Exploitation oriented	**Mixed**	**Exploration oriented**
Strategizing task (An effect of topic definition practice)	**Defined explorative**	**Pattern 3** 1) High tension 2) Large gap is likely Teams: H & I	**Pattern 4** 1) Some tension 2) Gap is possible Teams :G & J	(not in data)
	Defined exploitative	**Pattern 2** 1) Low tension 2) Gap is possible Teams: F, E, K	(not in data)	(not in data)
	Open	**Pattern 1** 1) Low tension 2)No gap Teams: A, B, C, D	(not in data)	(not in data)

1) Tension between the strategizing task and daily organizational tasks

2) Gap between the existing knowledge of the team and the knowledge required to complete the task

Figure 3 Patterns as joint effects of topic definition and team composition practices

In the following more detailed descriptions, I illustrate the patterns with a diagram utilizing the concepts and relationships from previous analyses. Most of the conclusions from the previous analysis section underlie all of the patterns of praxis. Appendix D shows how the conclusions match with the patterns. Last, the arrows in the following diagrams are not to be read as typical depictions of variance theory but rather describing how the process unfolded.

6.1.1. Pattern of Praxis 1: Open topic enables exploitation oriented experts to address daily concerns

The first pattern describes the effects of *an open topic* and *a team composed of exploitation oriented experts*. The open topic leaves the team relatively unconstrained in their actions. This enables the team to draw on their daily concerns as sources of ideas for strategic intentions. For example, they may list on-going development actions, plan solutions to current problems, or incremental performance improvements. Existing knowledge is the primary source of ideas although the team might also engage in local search activities. The resulting strategic intentions are exploitative development road maps for further incremental operations capability improvement. Furthermore, the intentions are based on cross-functional shared understanding which helps to gain the integrative

benefits of participation in strategy creation (e.g., Ketokivi & Castañer, 2004) and align the operations with higher level business strategies (Skinner, 1969). Figure 4 illustrates this pattern that is based on the Teams A, B, C, and D.

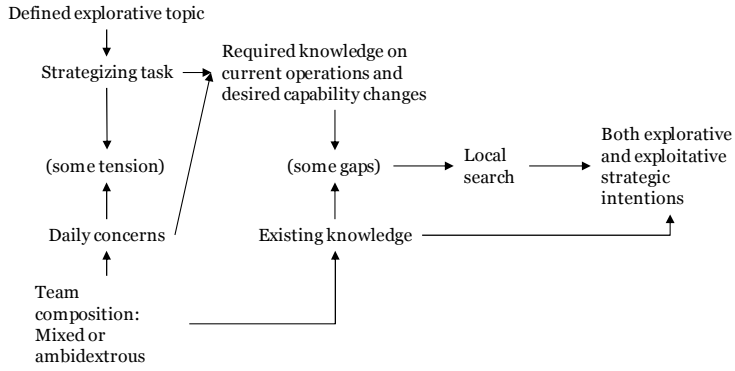

Figure 4 Open topic enables exploitation experts to address daily concerns

6.1.2. **Pattern of Praxis 2: Defined exploitation topic constrains exploitation experts to address a specific improvement or capability change**

The second pattern describes the effects of *a defined exploitation oriented topic* and *a team composed of exploitation oriented experts*. In this pattern the strategy creation topic constrains the team to construct plans for achieving a specific performance improvement or a specific capability change. Other daily concerns of the team are not addressed. If the defined performance increase objective is ambitious enough, the team feels the need to turn every stone and thus engages in extensive local search. If sufficient improvement potential exists, such as 50% in the case of Team F, the resulting strategic intentions are also exploratory because of their market impact. Teams E and K also follow this pattern. Figure 5 illustrates this pattern.

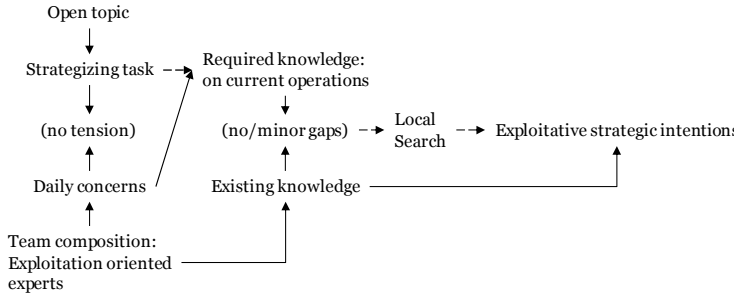

Figure 5 Defined exploitation topic constrains exploitation experts to address a specific improvement or capability change

6.1.3. **Pattern of Praxis 3: Defined exploration topic constrains exploitation experts to boundary-spanning search**

The third pattern describes the effects of *a defined explorative topic* and *a team composed of exploitation oriented* participants. In this pattern the topic requires boundary-spanning knowledge that the team does not have. Therefore the strategizing task enables and constrains the team to engage in boundary-spanning search for ideas. The daily concerns are pushed to the background. Of the four patterns, this one is most likely to develop explorative strategic intentions. Illustrated in Figure 6, the pattern is based on Teams H and I. In addition to exploration, Team H included exploitative elements to their strategic intentions.

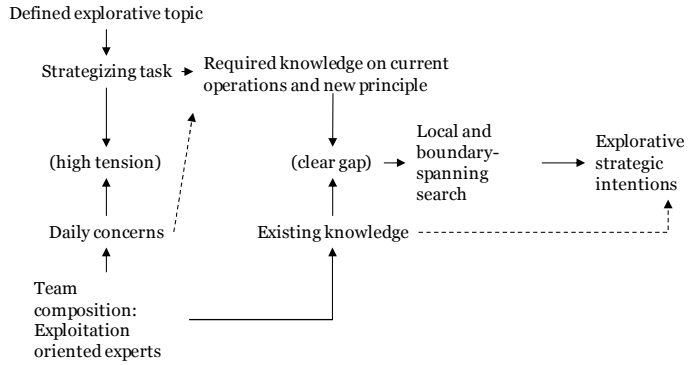

Figure 6 Defined exploration topic constrains exploitation experts to boundary-spanning search

6.1.4. **Pattern of Praxis 4: Defined explorative topic constrains a mixed team to address a specific capability change**

The fourth pattern describes the effects of *an explorative topic* that is *defined* to a specific change such as capability transformation or implementing a new process design principle. In this pattern the strategizing task is aligned with the team's organizational task. As the topic is exploration oriented, the strategizing task requires both knowledge of current operations and boundary-spanning knowledge of the changes to be employed. The team is composed so that the needed kinds of knowledge may already be held by team members (Team J). Otherwise the team may engage in local search, such as interviewing explorative and exploitative internal stakeholders (Team G). Teams G and J follow this pattern (Figure 7).

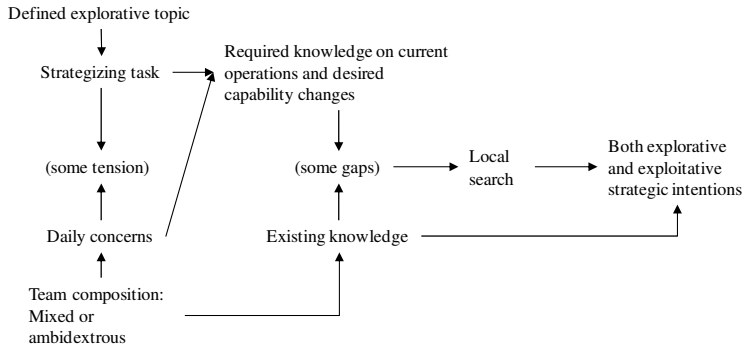

Figure 7 Defined explorative topic constrains a mixed team address a specific capability change

6.1.5. **Summary**

I propose a practice-based theory of the development of explorative and exploitative strategic intentions. Based on the three P's framework, this theory is about how the *practices* (topic definition and team composition) of one group of *practitioners* (organizers) enable and constrain the *practices* of another group of *practitioners* (participants) in their *praxis* of developing strategic intentions. I propose these effects in the form of four patterns of praxis. Given the practitioner's agency (Giddens, 1984), the patterns are likely but not deterministic. I summarize the main proposition:

> **Main proposition:** Organizers' topic definition and team composition practices jointly determine the most likely pattern of strategy creation teams' praxis.

The four patterns of praxis describe different ways for the strategy creation process to unfold. Therefore I do not aggregate them into a single process diagram. Rather, this theory consists of the main proposition and the separate descriptions of the patterns. Table 11 summarizes the patterns and the associated characteristics of the strategic intentions.

Table 11 The four praxis of patterns and characteristics of strategic intentions

Team Composition	**Topic Definition**	**Pattern of Praxis**	**Strategic intentions**
Exploitative	Open topic	1	Exploitative
Exploitative	Defined, exploitative	2	Exploitative
Exploitative	Defined, explorative	3	Explorative
Mixed	Defined, explorative	4	Both explorative and exploitative

7. Discussion

7.1. On proactive operations capability development

7.1.1. **Findings**

The key findings from the inductive analysis is that the organizing practices of team composition and topic definition enable and constrain the strategy creation activities and the kinds of strategic intentions the teams developed. Comparing and contrasting the 11 teams in terms of organizing and strategic intentions resulted in four patterns describing the development of operations strategic intentions. The main findings are:

- The description of the practices, practitioners, and praxis of operations strategy creation in a participatory operations strategy process
    - Practices: analyzing, preparing the communication of strategy, making decisions, collaborating, and organizing
    - Practitioners: organizers, team leaders, team members, coaches
    - Praxis descriptions for each of the eleven teams
- The explanation of how team topic definition and team composition practices jointly determine the most likely pattern of strategy creation teams' praxis.
    - The patterns of praxis 1 and 2 describe the kinds of strategy work that helps companies to align their entire operations towards business objectives.
    - The patterns of praxis 3 and 4 describe approaches for including more proactive, explorative elements to operations development.

7.1.2. **Contributions to research and theory**

These results listed in previous section are the main contributions to operations strategy research. First, the findings of this study show how strategy creation activity can be organized to initiate operations development towards short term alignment (Skinner, 1969) or towards

proactive capability development (Hayes & Pisano, 1994; Hayes & Wheelwright, 1984). Second, the detailed description of operations strategy creation adds to the understanding of the messy reality of operations strategy.

As a contribution to operations strategy research, this study draws out the link to theorizing and research on exploration and exploitation. Current research on achieving exploration and exploitation differentiates between structural, contextual, and temporal forms of ambidexterity (Gupta, Smith, & Shalley, 2006). Typically, the level of analysis is the firm and top management plays a key role (e.g., O'Reilly & Tushman, 2008). The study describes a strategy creation activity where middle management develops both explorative and exploitative strategic intentions. This implies a use of contextual ambidexterity (the strategy process) within a structurally ambidextrous organization (the case company). Thus, this study adds evidence to the prior observation that firms can draw on multiple forms of ambidexterity simultaneously (Kauppila, 2010).

As a contribution research on exploration and exploitation, this study of strategy creation locates the exploration-exploitation tension in the orientation of the participant's daily work and the orientation of their strategizing task. Existing research in the context of new product development suggests that the tension between exploration and exploitation is manifest in multiple different forms (Andriopoulos & Lewis, 2009). The management of the tensions through simultaneous differentiating and integrating at all organizational levels is important for sustaining ambidexterity (Andriopoulos & Lewis, 2009). The contribution is to identify an exploration-exploitation tension in the strategy creation activity. This tension, too, must be created by management through topic definition and team composition activities.

Last, this study links to Farjoun's (2010) discussion about separating search behavior from exploration and exploitation outcomes. In particular, the case of Team F is interesting as it shows how pushing exploitation to the extreme can result in explorative outcome. Another specific finding is the role of existing knowledge. In prior research, Paiva et al. (2008) argued that knowledge held by the manufacturing function is important for a proactive operations capability development. Adding further support to that argument, the pattern of praxis 4, and the case of Team J in particular, show how prior knowledge generating activities such as a benchmarking workshop link through the participants to other activities such as strategy creation. Team J developed the explorative strategic intentions without engaging in boundary-spanning search during the strategy process. Here

the search behavior and explorative outcomes are temporally separated. As an implication, past search behavior emerges as an important construct.

7.1.3. **Implications for practitioners**

In the introduction I described how managers in companies find themselves stuck in fire fighting mode, performing only the most immediate problem solving only. What does this study offer to people managing companies that are in such situations? As a practice theorist, Giddens (1984) argues that people do not need science and theory to act and interact since they are already very knowledgeable about the ways to go on in social setting. What social science can do, however, is to show the unacknowledged conditions and unintended consequences of action (Giddens, 1984). This study points out that seemingly innocent routine organizing practices can and will strongly influence how the strategy creation activity unfolds, and thus the kind of results it produces.

Understanding the enabling and constraining influences of organizing practices helps to manage strategy creation activity. The challenge in generating new ideas in an operations strategy process is not limited only to the 2010 process of the case company. As another example, during the planning stages of this study I spoke with a COO of a medium sized electronics manufacturing company. He had tried involving his employees in operations strategy creation to get some new ideas but nothing new came out of it. While this study is largely focused on overcoming the challenges of initiating exploration, exploitation is no less important (March, 1991). Similarly, Hayes and Wheelwright (1984) do not position the proactive operations capability development as the ultimate step of a maturity model that all firms should pursue. The four patterns of praxis can be applied as designs to pursue the operations capability development goals of the company in question. For instance, the pattern of praxis 4 could direct an organizer to think about whom in the company would hold boundary-spanning existing knowledge and perhaps invite them to participate.

On more detailed level, the various descriptive elements of this study are potentially useful for people who are preparing an operations strategy process of their own. The study documents one approach to developing strategy. As one practitioner pointed out, some of the analysis results, such as the categorization of the strategic intentions, could be used as a template in searching for ideas.

Last, this study also issues a caution to the established firms in developed countries. As firms in developing countries continue to enjoy lower costs while adopting latest manufacturing methods, the global competition based on operations capabilities is likely to intensify. In such environment

refining exploitation is insufficient. In the case the majority of the teams produced exploitative operations strategic intentions. Without conscious promotion of exploration, it operations strategies firms produce are likely to remain exploitative. Given the changes in global competition, this is a significant risk to established manufacturing firms.

7.1.4. **Limitations**

The findings and contributions are based on an analysis of what took place in the case company. That analysis is based on a data set of real-time interviews, observations, and documents. In constructing the descriptions of praxis, primarily I utilized interview data and observation data. For the interview data, it is always possible that the team drew on some practices but the interviewee did not find them notable enough to be mentioned in the interview. The analysis on the sources of ideas suffers most from this limitation. However, it is difficult to reliably triangulate on the sources of ideas since sometimes the only trace is left in the memory of the participants. For this reason, the descriptions of search depend on whether the interviewee remembered it and considered it significant enough or not. However, this limitation is reduced by having multiple interviewees in some of the teams. Nevertheless, in future research an ethnographic approach with even more in-depth observations could help to address this issue.

The application of practice theory in the analysis has limitations. I chose to analyze practice by staying close to the ways the participants themselves appeared to understand what they do. Therefore, I did not address, for instance, the discursive practices in detail and thus yielded the potential insight of such analysis (e.g., Mantere & Vaara, 2008; Samra-Fredericks, 2003). Similarly, there remains much potential in the material aspects of strategizing (e.g., Orlikowski, 2007). For instance, what was the role of the location of strategizing? Does sitting at one's own desk in a teleconference keep attention to more daily things than an off-site face-to-face workshop? The point of these speculations is to acknowledge that my account of what was the case is not the only possible one. Future research could study the influence of those aspects that I chose not to focus on.

Last, the studied context introduces a limitation. The data I used comes from the context of a large global mechanical engineering company that is performing relatively well. It is possible that different context would have displayed a different set of practices. On the other hand, practice-theory argues that practices are often shared across organizational boundaries (Whittington, 2006). This means that my findings are likely to apply in several other contexts as well.

7.1.5. **Future research opportunities**

This study probably opens up more questions about the proactive operations capability development than it answers. First, how do these findings apply in other contexts? Practice theory suggests that practices are shared across time and space to varying extents (Giddens, 1984). The organizing practices described here are rather the basic to organizing a group of people to complete a task together. One can reasonably expect to find them in several organizational contexts. But what about differences in organizing practices? For instance, the clan oriented organizational culture is associated with proactive operations capability development (Bates et al., 1995). Do differences in the organizing practices of bureaucratic and clan oriented organizations explain the effect on a more detailed level? Also, are there boundaries to my assumption of people being motivated to complete their task? A stream of research building on this study could investigate how the fundamental organizing practices of the firm and its operations organization enable and constrain the creation of strategic intentions or the initiation of operations development. Such research should not be limited to strategy creation activity only but should also study other managerial activities that constitute the stream of activity that is operations strategy.

Future research could also study the different kinds of operations strategy practitioners. The top right empty slot in Figure 3 (on page 90) raises a question: when would it make sense to have an exploratively oriented team that was given an exploratively oriented topic? R&D experts working on an R&D topic would fit but perhaps be out-of-place in an operations strategy process. Including operations experts in an R&D team would make the team mixed in their orientation. However, hiring external consultants to bring in new ideas matches the figure. Future research could address, for instance, the role or impact of operations strategy consultants.

Another research opportunity would be to study the effects of operations strategizing tools and frameworks on initiating proactive operations capability development. The strategy-as-practice research stream has produced studies on effects of the tools and practice of strategizing, such as workshops (e.g., Hendry & Seidl, 2003) and PowerPoint (e.g., Kaplan, 2011). In operations strategy, there is a stream of action research studies that has studied the application of frameworks, such as order winners, order qualifiers analysis (Menda & Dilts, 1997). Would an operations strategy framework enable and constrain practitioners to boundary-spanning search and identify opportunities for proactive operations capability development? For example, during the 2010 process some of the teams used the SWOT analysis framework. Unlike in the Porterian application of SWOT analysis relating to market positioning, the

participants identified operations risks and possibilities rather than looking outwards to identify market threats or opportunities. These thoughts on the effects of tools and frameworks are, of course, just an example of the many possibilities that the practice perspective offers to operations strategy research.

7.2. Towards a practice theory of operations strategy

This study continues the work of understanding the reality of operations strategy (e.g., Swamidass et al., 2001; Barnes, 2002; Rytter et al., 2007; Kiridena et al., 2009). At one level the study offers a detailed case study of strategy creation. The broader contribution to this discourse is in making the connection with practice theory. In this study I identified a limited set of practices that I then categorized into five categories: analyzing, preparing the communication of strategy, making decisions, collaborating, and organizing. Some of the practices are shared across organizations as practice theory argues (Whittington, 2006). SWOT analysis and the use of PowerPoint are the examples of extremely widely shared practices. The shared nature of social practices provides a basis for generalization and the accumulation of knowledge that has been missing from strategy process research (Johnson et al., 2003; Whittington, 1996, 2006). The findings of this study show that there are similar benefits available to operations strategy research from developing the practice perspective.

To draw out some implications for practice theory, we can develop a new perspective to the role of context in operations strategy creation theorizing. Existing research views context primarily as a source of uncertainty due to external events, which limits the utility of strategic planning (Barnes, 2002; Mintzberg, 1994). Context is also associated with all the idiosyncratic details of a particular setting that are difficult to theorize but still present in operations strategy creation. In practice theory (Giddens 1984), context is a location in time and space where social actions happen. In other words, everything that exists, exists only in a specific context.

For instance, existing research recommends an inclusive operations strategy process (Brown et al., 2010; Ketokivi and Castañer, 2004; Papke-Shields et al., 2002, 2006). This recommendation is an abstract shell. As this study shows, the inclusion of many participants means engaging in various organizing and collaboration practices. These practices are held by the participants that are part of the context. For example, do the organizers compose cross-functional teams and assign them topics, as in this case? Alternatively, do they encourage the use of internal social media tools and allow participants to contribute to topics of their own choosing? Or perhaps

they will conduct a survey with open text fields to enter ideas. The organizer's choice between these and other possibilities depends on what makes sense for them to do – or, ultimately, what practices they are members of. In this way the role of context is to fill in the blanks in the abstract idea of an inclusive operations strategy process.

Furthermore, from this conceptualization of the role of context, it follows that practitioners can be thought of as a contingency in the link between operations strategy process and performance. Existing research has identified a set of characteristics and dimensions of operations strategy processes that are associated with performance (e.g., Brown et al., 2007, 2010; Papke-Shields et al., 2002, 2006). I propose exploring the idea of skillful practitioners. Recent operations management research already includes studies of high-reputation plant managers (Smith et al., 2009) and project champions (Gattiker and Carter, 2010). In the case company, the participants had varying degrees of experience on strategy work. The research opportunity is to study if and how the presence of participants skilled in specific strategizing practices influences the link between operations strategy process dimensions and performance. The categorization of different practices from chapter 4.2 provides a starting point for operationalizing. Alternatively, further research could take more open-ended inductive approaches to understanding the constitution of the performance effects of an operations strategy process.

As another implication, this study suggests that operations strategies are more contextual than typically represented in research. My analysis study describes the detailed strategic intentions consisting of goal statements and action plans to develop operations capabilities. At the broadest level, we as OM scholars tend to associate the concept of operations strategy with a set of operational priorities of cost, quality, flexibility, and delivery performance, and ask managers to rate them as an indication of their firm's operations strategy (for survey scales for operations strategy, see Roth et al., 2008). My point is not to critique this as such – it seems to be one of the most viable options to get a general understanding of the operations strategy of the responding firm especially in large-sample studies. However, the findings of this study indicate that in an empirical setting, operations strategy can involve a much wider set of meanings than a rather simple goal expressed in terms of operational priorities. Therefore, if interested in empirically uncovering operations strategies that organizations use to guide their decision making, a study limited to operations strategy as a set of priorities might not give a complete understanding.

This study offers one practice theoretical contribution to operations strategy and opens the door for many more. The strength of the practice

perspective is in its analytical ability to separate contextual activity into practices that are relatively stable and shared across time and place. This opens up new research opportunities. For the end-user of operations strategy knowledge, practitioners, practice theoretical knowledge has the advantage of being grounded in what they do, and thus readily applicable. To make the underlying argument explicit, I propose the adoption of practice theory in the study of operations strategy.

8. Conclusion

This study develops a practice perspective to the development of explorative and exploitative strategic intentions. It offers four patterns of praxis to describe the joint effects of team composition and topic definition practices. The results link operations strategy creation as a social activity with the central models of operations strategy (Hayes & Wheelwright, 1984; Skinner, 1969). First, the findings describe how an operations strategy creation activity can be organized to contribute towards proactive operations capability development, which is central to the fourth stage of Hayes and Wheelwright's (1984) model of operations' contribution to competitiveness. Second, the results suggest ways to organize strategy creation to refine alignment between operations and business objectives. As a broader contribution, this study demonstrates the potential of the practice-lens to operations strategy research.

For practitioners managing various organizations, the study highlights the unintended consequences of seemingly innocent organizing practices when applied to strategy creation. Also, the results may help to understand previously unacknowledged conditions in strategy creation work. My hope is that these results will help some companies to avoid getting stuck with performing only short term improvements and solving the most acute problems.

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Appendix A - Interview guides

Interview guide 2010
(The point of the interview is to have an open conversation and the following questions are used as an overall guideline)

Background
Could you describe your position and role in the organization as well as key responsibilities and your work history?
Probes:
What drives or directs your daily behavior?
How did you get involved in the strategy process work?
What is your prior experience on strategy process

Strategy process work
Could you please describe the strategy process work?
Probes:
What do you see as the main goals of the strategy process work?
What instructions did you get?
Different perspectives of different people: how do you take these into account?
What different roles did the members play?
What were the challenges during the process? What could have been done differently?

New operations strategy and GMM strategy
Could you describe what are the key points of the new operations strategy with your own words?
Probes:
What is the relationship between operations strategy and GMM strategy?
How does this relate to your own work?
How will this strategy drive action in general?
Improvement projects, process design decisions?
Do you expect to see some major changes in your work as compared to the past?

Organization
Could you please describe the organizational unit to which you belong and how it has changed recently? Do you expect to see some major changes due to for example the new strategy?
Probes:
What are the main units with which you communicate?
How do you coordinate activities with other units?
Process-driven organization, what does it mean to you and how does it affect your daily work? End-to-End processes?
Harmonization? [GMM transformation]?

Other issues
Could you describe how do you see strategy in general? What is strategy and what does it mean to you? Is there anything else we should know but haven't asked?

Interview guide 2011
(The point of the interview is to have an open conversation and the following questions are used as an overall guideline)

Background
Could you describe your position and role in the organization as well as key responsibilities and your work history?

Strategy work
Could you describe the task of the team?
Probes:
How do you see the objective of teams work?
How do you see the team's work as part of the overall strategy? And even corporate strategy?
Could you describe the process of the team?
Probes:
How was the team's process designed? (Potential comparison to last year.)
Was there any key events during the process?
What kind of things you did off-line?
What was accomplished in the meetings?
Could you describe how your team determined the vision / strategic goal for this team?
Probes:
How do you see the strategy intent in general?
Where did you start? (e.g. decomposing the topic to pieces)
What type of analyses did you conduct?
Could you tell us about the crystallization step?
Could you tell us about how you developed the action plans?
Probes:
Where did the ideas come from? (any examples)
How have they been developed?
How are they evaluated?
Did you do work that ended up discarded? Why?
Could you evaluate the extent you see the teams output has following characteristics?
Continuation of on-going development
Solving problems
Incremental improvement of current ways of working
Change to current ways of working
Experimentation or exploration of something new
What are your thoughts on the implementation of this new strategy?
Probes:
What was the impact of last year's strategy?
Do you see this being different in terms of implementation?
For feedback, what worked well and where were the challenges? (potential comparison to last year)

Appendix B - Observed practices and examples from data

Category (Description of category) Practices	Examples from data
Analyzing (Gathering and synthesizing information to be used in the strategy creation)	
Business environment analysis, SWOT analysis, gap analysis, internal and external interviews, stakeholder surveys, brainstorming, internet searches, and reviews of existing information (e.g. metrics data, development project status reports, six sigma black belt studies).	In Team J mid-review: Team J leader: "May I show something where they have this [design principle] already planned a bit?" Organizer 3: "Please." Team J coach: "Organizer 3, you need to promote other Team J leader." Organizer 3: "Will do." [Team J leader shares a document: delivery process guideline 0.1 doc - draft from 2008] "Umm.. so basically, this was trough the discussion we had during this phone calls so .. in order ... were basically .. the discussion what we could improve in our processes in order to get more segmented approach. Then we said, ok, what is the situation today in [GMM], the situation today in [GMM] is following. Then we were really creating the state of the art, in terms of ... let's say, input we have from our customer. We realized that we have lot of input, but clearly a lot of input coming from reports that are going to customer team, to CI surveys, to interviews with customers, to customer focus groups, to... but clearly a lot of material... but we realized also that this material was not right to the ... to ... there was not cascading of this material, so we were also realizing that this material was at time created and then not used in ... in very efficient way." (Team I leader)
Preparing the communication of strategy (Enhancing the communicability of the strategy)	
Use of PowerPoint templates (e.g. one-slider, gap analysis slide, strategy roadmap slide), 2x2 matrices, discussions on how specific words communicate	Team A mid-review: Organizer 1: "yeah, lot's of good work done. Even if team is little bit behind schedule, I trust you'll get there. Perhaps next time you can reduce the slides a bit. Now it was ok when you selected the key slides. But when Organizer 3 is reading this from SharePoint and trying o pick up the message.." Team B mid-review: Team B leader: "Ok. As the third stream we had collaboration in [process] in change management. Main topic here to look at communication and cooperation to get everything done here." Organizers 1: "One comment. Third point is good but collaboration is rather general topic so how to make it more meaningful and concrete?" Team B leader: "These are still in high level and we will dig into details in coming slides. I'll put a note here that we could make it more concrete here too."
Making decisions (Determining and influencing the content of strategy)	
Editing work-in-progress strategy slides, suggesting changes, expressing opinion or perspective, and voting	From Team E mid-review field notes: Team E coach continues that in case of [specific process] there is no space where to put the stuff. One of the key questions is who should control. He brings up that this is really an issue about organization structure but the process needs to be understood as well as local vs. global requirements. E.g. SAP access in the fields is not possible. Team E coach laughs again and says I am the boss and that these issues are radical but "I am allowed to say this". Discussion in Team A team meeting: Team A member: "In principle already established this process, responsibility of [internal stakeholder's] team. Lack of resources and in practice have not done what should have been done." Team A Coach: "Good addition, could also outsource it but needs to be on the road map when will be done again. Everyone knows when to do it." Team A Leader: "Outsourcing [part of process]."
Collaborating (Enabling people to work together on strategy)	

Category (Description of category) Practices	Examples from data
Online meetings using teleconferencing service and screensharing tool, face-to-face meetings, one-on-one discussions, file sharing by Sharepoint or email attachments, kick-off events, and workshops	These practices were present in all interviews and observations. I received Outlook – calendar invites to which I would respond with the accept-tentative-decline choice. The invites also contained information about joining the teleconference and the screensharing tool. Example from the end of Team J mid-review: Organizer 1:" Can you please upload this to Sharepoint even if it's a draft? It would be helpful for many." Team J coach: "Will make a clean version and add there."
Organizing (Organizing the efforts of the people to develop a strategy)	
Team topic definition, guidelines for strategy work, scheduling, team composition	Example from Team F mid-review: Team F leader [starts presentation]: "The team has had only one meeting last Friday, we collected good information and we have good idea what to do next. But of course we would be happy to receive more feedback." Team F leader: "The team is here, we redefined the scope and thought we need more relevant members for the overall task. Hence the team structure has changed quite a lot from the original. Team members are [lists people and their functional background]. I think it would be beneficial still to involve people from technology organization." Example from the end of Team G final review: Organizer 3: "Thanks maybe I should comment. First, very sharp work for stream all the way starting from intent to as-is and coming up to these 3 strategic initiatives, good thinking. Maybe in last slides couple of bullets details, not everyone in company immediately sharing same opinions but if you stick to the main lines and three aspects, looks to me you have captured essence. So good work. Maybe this slide set could have this one-slider. What is the message from this team in one slide. Guess it is these 3 points of what we need to do. Then, clearly next step is to try to understand what are the strategic projects. If these 3 initiatives need to happen, which directions GMM need to take then so more than just these decision. Maybe capability projects that need to be set up. Process development that requires strategic projects could be the last slide. To me looks very good job and sharp thinking. Nice work done"

Team	Topic	Orientation of the topic (rephrased topic)	Team composition (orientation in daily job)	Existing knowledge on the strategizing topic	Search activities reported as significant source of ideas	Dominant strategic intention
A 2011	Open topic		Mfg, sales, plan (exploitation)	Expertise on the topic, experiences from prior attempts to solve a major problem "Our understanding was based on previous understanding and discussions with people" (Team A leader) "[from internal stakeholder] there was inputs about needs of things that need to be in place for other things to proceed," (Team A leader) "[new process] the actions come clearly from that we have already piloted this process. So the actions come clearly from practice and maybe it was about confirming that we should do this and extend it." (Team A leader) "[another process] the actions had been felt as problems for a long time. So we had understanding that this is not working and needs to be fixed." (Team A leader) "Actually in quite many of these things had been people's minds for long time. And they were easy to put on table." (Team A leader)	-	Refining and adjusting processes (Exploitative) "it's a picture of how this works in the year 2014" (Team A leader) "There was probably a strong, consolidating existing things was a strong perspective" (Team A leader) "The was sort of grounding of organizational frustrations and development ideas into the strategy" (Team A leader)

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B 2011	Open topic		Logistics, mfg, sources (exploitation)	Expertise and experience on what needs to be developed and how "The direction has been clear right from the start, the only question is the speed and the size of leap we need to make to that direction" (Team B leader) "Most of the information came from within the company, but of course many of our team members have worked in this field long and have experience from other companies. So they have good perspectives to these topics." (Team B leader) "The participants knew pretty well is the solution to the gap or problem a change in the process or an information system change or product development need" (Team B leader)	LS: Talking to internal stakeholders, colleagues “We had few members whom we gave topics related to for instance technology, world economic situation, competitors, and few other things… so they just by themselves thought and asked from few stakeholders, few colleagues and bit from outside about views that do you have any ideas about what will happen in this sector and what will influence us. So we thought about it by ourselves and asked from few person outside the team. (Team B leader)	Refining and adjusting processes (Exploitative) "It’s very much this. There’s no radical changes of direction." (Team B leader) "There was few changes, but even they have been discussed before this process"(Team B leader) "It’s more about improvement than really solving problems." "There’s only few points that are clearly about creating something new" (Team B leader)

Team	Topic	Orientation of the topic (rephrased topic)	Team composition(or ientation in daily job)	Existing knowledge on the strategizing topic	Search activities reported as significant source of ideas	Dominant strategic intention
C 2010	Open topic		Mfg, logistics, sourcing (exploitation)	On-going development actions, expertise and experience on the topical sub-process "It came from the participants expertise and experience. So there we started from the daily realities and those needs that had been, like, identified. So not so much from strategic goals when we didn't even know what those strategic goals are. There exists many development projects and there are many [projects] already prepared and , of course, what has been already agreed. The starting point was that ok, we have these initiatives and these principles like system integration principles for example or some sourcing principles that are already everyday business. So those were not challenged in any way but just accepted that this is the way we do this. So we kind of did not take advantage of the opportunity to rethink the fundamentals. We just started from that let's keep doing what we are doing and make as effective action plan as possible." (Team C participant)	-	Refining and adjusting processes (Exploitative) "I would think that there's a very comprehensive picture for the next three years. Those contents will definitely change a bit, as I said some of these are bit new and we don't really know what they will contain at detailed level." (Team C leader)

Team	Topic	Orientation of the topic (rephrased topic)	Team composition(orientation in daily job)	Existing knowledge on the strategizing topic	Search activities reported as significant source of ideas	Dominant strategic intention
D 2010	Open topic		Mfg (exploitation)	Expertise and experience, knowledge of improvement potential “ I think the second stage the key driver was to be concrete with the action plans so according to the area of expertise of each of the team members, we discussed together what should be the priority according to general proposition of the strategy, what should be the priority to proceed with…it was sort of a team work to decide which ones were the key actions to focus on. Having a clear picture in mind it was this concreteness of the actions to be planned … and the possibility then to manage the action and carry on the action with these team members.” (Team D leader)		Refining and adjusting processes (Exploitative) “As I said, there are actions that are very detailed, I was previously mentioning this timing for the production activity, … of course a sort of tool to help to improve the situation will lead us to the excellence, the manufacturing excellence which our last …our goal for the future. But, if I must consider an action that on long term, will create a difference, a real difference then this [manufacturing performance improvement] is definitely one of those actions.” (Team D leader)
E 2011	Defined topic	Exploitative (How to improve this process?)	Sales, inst. (exploitation)	Expertise and experience with both current and past processes in the topic area “I didn’t want to reinvent the wheel.. let’s say processes are repeating.. every 6 or 7 years similar processes come up just slightly modified. So here we are focusing on what is existing and how can we modify it. Ok, we have also some new items” (Team E leader) “It was challenging to get information from different [geographical] business areas, so we first concentrated on [one business area].” (Team E leader) “We analyzed what needs to be done and where is the [performance improvement] potential [for each different area]” (Team E leader)	-	Refining and adjusting processes (Exploitative) “[on not reinventing the wheel] We have to highlight that we have really good processes but we just need to modify them slightly to achieve something” (Team E leader) “Based on input, we have created improvement potential for each area and based on that agreed on what is best-in-class for each area in 2014” (Team E leader) “we are already working on some areas today, so this not something new like creating new processes” (Team E leader)

Team	Topic	Orientation of the topic (rephrased topic)	Team composition (orientation in daily job)	Existing knowledge on the strategizing topic	Search activities reported as significant source of ideas	Dominant strategic intention
F 2011	Defined topic (Redefined by team)	Exploitative (How to support current business?)	Mfg, sales (exploitation)	Expertise and experience of the sub-process to be improved "We have this [problem] that has been known for a long time." (Team F leader) "with people responsible of the areas we had this as-is discussion that if [the problem] exists, then why does it exist and if we want to get a significant improvement then what should be changed." (Team F leader)	LS: Internal surveys, collecting lessons learned through interviews "We did analyze the results of this [internal] survey which gave us confirmation about the topic." (Team F leader) "this is not the first time we are trying [to solve the problem], so we went back to those and took a look if the previous efforts produced the desired improvements and if not, then what went wrong and what should be done so that we could reach a better result" (Team F leader)	Seeking a radical performance improvement (Both exploitative and explorative) "Some things were clear continuation of on-going development and trying to maximize benefits, but some of this is new. Things that have not been even presented" (Team F leader) "we are looking for a radical change. This should be a step change." (Team F leader) "if the current model works and we can reach the goal through improvement, then we kept it" (Team F leader)
G 2011	Defined (Participation in topic def.)	Explorative & exploitative (How to transform this capability?)	R&D, mfg, sales (exploration / exploitation)	Understanding of the problem and kind of change needed. Brainstorming for alternatives "[the general solution] it was there in the beginning" (Team G leader) " It was mainly, if I can summarize, based on experience, based on what has been done so far [...] good practices or something to be improved." (Team G leader) "All those guys have done this many times. So the idea was to take the experience and challenge the experience." (Team G leader)	LS: Internal workshops, internal interviews "We have done a kind of break-down structure, giving everybody a task what to check, what to search, and together we reviewed the ideas"(Team G leader)	Capability transformation (Both exploitative and explorative) "we have this kind of , you have seen the roadmap, of what could be implemented tomorrow and what needs to have little bit time." (Team G leader) "yes there are incremental items, but also a step change"(Team G leader)

Team	Topic	Orientation of the topic (rephrased topic)	Team composition (orientation in daily job)	Existing knowledge on the strategizing topic	Search activities reported as significant source of ideas	Dominant strategic intention
H 2011	Defined topic	Explorative (How to apply a concept?)	Mfg (different plants) (exploitation)	Experience from different plants, expertise with the improvement methodology "About these different locations, one person can't know it all but having people from different places know their specialties and ways of working. So that's how it comes together" (Team H leader)	LS: internal studies BSS; Benchmarking visits, gathering other companies' experiences with the improvement methodology "Of course we are not the first company in the world trying to implement this, so there's experience to be found and of course we took a look at what competitors are doing" (Team H leader) "I think the best way to learn is to visit other companies and see what they do. From that background I have developed my perspective" (Team H leader)	Capability transformation (Both exploitative and explorative) "We are want to find actions with bigger effects. We know competitors have achieved these results with similar actions, we want to get to those too" (Team H leader) "the old work from last year is foundation we built on that. Then this [improvement methodology] thing, the goal is to find bit more aggressive way of working" (Team H leader)
I 2011	Defined topic	Explorative (What would a concept mean for us?)	Senior operations manager (exploitation)	Little existing knowledge on the new process design principle	LS: Internal experts giving presentations to the team BSS: Customer interviews, literature searches "During this discussion was coming also the idea to have a sort of.. to extend the team. […] And they also provided to have a lot of additional material. So, let's say, there was core team but also extend the team with other competences that were coming later after deeper analysis of the task that we were doing." (Team I leader)	Application of a new process design principle (Explorative) The most concrete results proposals for changes to process definition and initiatives to create new information channels. The work resembles first steps. In the closing workshop, the team leaders presentation of proposals was followed by comment from Organizer 3: "is this next step or ultimate goal? It looks like next step. Now shoot some questions"

Team	Topic	Orientation of the topic (rephrased topic)	Team composition (orientation in daily job)	Existing knowledge on the strategizing topic	Search activities reported as significant source of ideas	Dominant strategic intention
J 2011	Defined (Participation in topic def.)	Explorative (How should processes be transformed?)	Process owners (ambidextrous)	Broad expertise and understanding of the processes, previously developed ideas "Well, we had no shortage of material. After all, we do this for living. The challenge was to find the main topics to focus on." "Of course, this [big idea] is nothing new. We just upgraded a slide that was created maybe a year ago. We have been part in the origins of [a program]. The idea was born there already and now it has been refined in this strategy ""We had this huge analysis project last year [..} where we face a load of best practices from different industries" (Team J leader)	-	Application of a new process design principle (Explorative) "you need to have courage to think, but you also need to keep your feet on the ground." (Team J leader) "this [problem solution] is something that we'll do now. The time is right for that." (Team J leader) "then this [idea] is something that is prepared now but will probably be realized in two years" (Team J leader)
K 2011	Defined	Exploitative (How to implement this capability?)	Mfg, Sourcing (Exploitative)	"At the first stage we did brainstorming activities, so basically [team leader] told to think about which development activities to put in this strategy, then all the people did a list, then [team leader] analyzed the lists and selected the most valuable ideas and comments and then reassigned the task to the people to develop slides of the concepts." (Team K workshop representative)	LS: Discussions with internal experts "We were adjusting and fine tuning those, but main concepts were coming from [internal stakeholder]" (Team K workshop representative)	New capability development (Exploitative emphasis) "This system we are aiming to implement, we hope it gives us methodologies to solve problem"(Team K workshop representative) "This will change quite much the actual way of operating… moving from reactive way to proactive way" (Team K workshop representative)

Appendix D - Matching patterns of praxis with the conclusions from analysis chapter 5

Pattern of praxis	1	2	3	4
Conclusions from 5.1 The strategic intentions produced by the team				
1: Mainly exploitative characteristics are present in strategic intentions to refine and adjust processes.	x	x		
2: Mainly explorative characteristics are present in strategic intentions to apply new process design principle.			x	x
3: A mix of exploitative and explorative characteristics are present in strategic intentions to seek radical performance improvements, to develop and implement new capabilities, and to transform capabilities.		x	x	x
Conclusions from 5.2 Sources of ideas and knowledge				
4: Knowledge enters the operations strategy creation activity either through search activities or is brought in as existing knowledge of participants	x	x	x	x
5: Team composition determines the existing knowledge of the team	x	x	x	x
6: Together the knowledge of current operations and boundary-spanning knowledge enable the inclusion of explorative characteristics in the development of strategic intentions			x	x
7: Knowledge of current operations enables the inclusion of exploitative characteristics in the development of strategic intentions	x	x	x	x
Conclusions from 5.3 Reasons for action				
8: Open topic enables the team to align with the concerns of the daily organizational tasks in developing the strategic intentions	x			
9: Defined topic enables and constrains the team to align with the strategizing task in developing the strategic intentions		x	x	x
10: Participation in topic definition enables the team to align with the concerns of the daily job in developing strategic intentions		x	x	x

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