

**Understanding and Practising Market Orientation:  
Exploring How Managers Cope in Turbulent  
Environments**

by

Geir Grundvåg Ottesen

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Department of Social Science and Marketing  
The Norwegian College of Fishery Science  
University of Tromsø, Norway  
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# CONTENTS

## OUTLINE OF THE THESIS

### PART I

Market Orientation: Promises and Challenges .....	1
Perspective .....	8
The Research .....	12

### PART II

Papers I – VI

### PART III

Main Findings .....	1
Contribution .....	4

### REFERENCES



## OUTLINE OF THE THESIS

The present thesis is about market orientation and how it is understood and practised by firms operating in highly turbulent and competitive environments. The thesis is divided into three parts. In **Part I**, the introduction discusses benefits and challenges related to how market orientation can be practised in “real-life” settings. Then the perspective for the thesis is described, and finally, the research outlined. In **Part II**, a collection of six papers is presented. In **Part III**, the main findings and contributions of the thesis are highlighted.



# **PART I**





## Market Orientation: Promises and Challenges

During the last 10 years or so, the construct of market orientation has been the object of considerable interest and attention from researchers. A range of definitions of market orientation have been suggested and refined, and operationalised measures developed (e.g. Deng and Dart, 1994; Deshpandé and Farley, 1998; Kohli and Jaworski, 1990; Matsuno *et al.*, 2000; Narver and Slater, 1990; Ruekert, 1992). Antecedent conditions for, and consequences of, being market-oriented have been examined as well (e.g. Greenley, 1995; Jaworski and Kohli, 1993; Narver and Slater, 1990). Since 1990, more than 150 articles about market orientation have appeared in scientific (peer-reviewed) journals.

How can this strong interest be explained? And what about practitioners – Have they adopted a market orientation? The extent to which business managers and their firms have adopted a market orientation has not been examined widely and is thus uncertain. However, there are compelling reasons to believe that business managers are interested in and motivated to attend to and try out the ideas of market orientation. In today's turbulent and competitive environments, customers are a scarce "resource". To survive and prosper, business firms need to attend to and attract a sufficient number of customers who are willing to purchase their products and services at a price which at least covers the costs involved. Usually, firms also need to pay attention to competitors because competitors' goods and services are likely to influence customers' preferences and choices (Dickson, 1992). A market orientation offers a "lens", believed to provide organisations with a unifying focus and clear vision that will lead to improved access to information and understanding centred around creating superior value for customers (Day, 1994; Kohli and Jaworski, 1990; Slater and Narver, 1995). It is also believed that firms "oriented" toward the market (i.e. customers and competitors) should have good prospects for attracting a sufficient number of profitable customers (Kohli and Jaworski, 1990). Thus, a market orientation is assumed to be highly beneficial for business firms and other types of organisations.

Before managers can develop an interest in, and benefit from, the ideas of market orientation, they must be exposed to the concept and learn how it can be put into practice. During the last decade or so, managers have been widely exposed to "propaganda" in favour of market orientation. For example, market orientation has received much positive attention in management-oriented journals such as the *Harvard Business Review* (e.g. Shapiro, 1988) and *California Management Review* (e.g. Day, 1994). In the Norwegian context from which the

current research is derived, the award-winning article by Kohli and Jaworski in *Journal of Marketing* in 1990 has been translated into Norwegian and presented and commented on in a Norwegian management journal (see Rygge, 1998; Sandvik, 1998). Also, a special issue focusing on market orientation was published some years earlier (see e.g. Grønhaug, 1991; Selnes and Hårvik, 1991). The benefits of market orientation are also disseminated to practitioners through marketing seminars, courses and textbooks (e.g. Kotler, 1994). Furthermore, market orientation is a frequently mentioned success criterion or “recipe” emphasised by Norwegian policy makers (e.g. SND, 1994) and governmental bodies (e.g. Fiskeridepartementet, 1998).

For the above reasons, managers responsible for their firm’s activities and performance are likely, not only to be exposed to the market orientation concept; they are also likely to find “market orientation” and its underlying intentions both appropriate and appealing.

However, present insights regarding *how* firms implement the ideas of market orientation are limited. And, in spite of the assumed benefits and its appealing features, adopting and exploiting the ideas underlying the market orientation construct may not be straightforward. There are several reasons why this may be the case. For example, Hult *et al.* (2001) demonstrate the presence of five “market orientation paradigms”. This multitude of perspectives makes it hard to choose the “right” one and may thus be confusing for managers. In addition, a close look at the empirical evidence shows that the benefits of market orientation are disputed. Studies from North America have generally shown a positive relationship between market orientation and several measures of performance (e.g. Atuahene-Gima, 1996; Jaworski and Kohli, 1993; Ruekert, 1992; Slater and Narver, 1994), while European studies have been inconsistent (Diamantopoulos and Hart, 1993; Greenley, 1995). For example, in a study of 240 British firms, Greenley (1995) found no support for a main effect between market orientation and performance variables such as return on investment, new product success rate and sales growth. It should also be noted that, in his study, Greenley identified environmental variables moderating the relationship between market orientation and performance. This led him to conclude that: “...market orientation may not have a direct effect on performance in all national business cultures, as its influence seems to be dependent on the environment” (p.8). Similarly, other studies have found support for factors moderating the effect of market orientation on organisational performance (Jaworski and Kohli, 1993; Slater and Narver, 1994). Therefore, managers considering adopting the ideas underlying market orientation may want to evaluate the “evidence” and consider its implications for their

own organisation and context. Undertaking such scrutiny is, however, a substantial task, which may be beyond the capacity and competence of business managers or other practitioners. And, if they do take on this task, they will probably be left with more questions than answers.

Managers interested in market orientation face other problematic issues as well. For example, whereas much research on market orientation has focused on developing and testing theories regarding, e.g. the consequences of market orientation, very little effort has been devoted to understanding how firms and their management can successfully “translate” the ideas of market orientation into practice. This is a highly relevant concern because, as with most theoretical constructs, the concept of market orientation is relatively abstract and may thus require substantial knowledge and motivated effort to put into practice (Grønhaug, 2001). Managers acquiring the market orientation concept may also vary in the extent to which they are exposed to and adopt the “full” theoretical construct, including its conceptual foundations, or if they merely adopt a more or less empty “label”. In addition, the broader “theory” of market orientation has become more elaborate and encompasses so many relationships that it has become complex, making it more difficult to exploit (cf. Day and Montgomery, 1999).

For these reasons, managers may find it difficult to apply the ideas underlying the market orientation construct and the “theory” it is part of. What appears to be missing is research into *how* firms and their management can adopt and exploit the market orientation construct in an adequate manner.

An additional factor which may make it difficult to adopt the idea of market orientation is that the “theory” of market orientation is based on more or less implicit assumptions that do not hold true in all contexts/situations. This can be illustrated by a concrete example: It is common wisdom that securing timely and appropriate supplies of critical input factors crucial in order to satisfy customers (and thus to be market-oriented). However, securing supply is almost neglected in the literature on market orientation. There may be several reasons for this neglect, e.g. that past research has primarily been conducted in industries where supply is relatively stable and thus that securing supplies is assumed to be unproblematic in terms of being market-oriented. It seems plausible, however, that firms’ ability to satisfy their customers is significantly restricted when they face a highly turbulent supply situation (e.g. they may be unable to serve their customers as agreed upon). Thus, to be market-oriented, they must handle the supply situation adequately. That the research literature offers little insight into how market-oriented firms cope when they face high supply

uncertainty suggests that the current “theory” of market orientation is less useful in such situations.

Another limitation regarding past research on market orientation is an almost exclusive focus on firms operating under conditions of oligopolistic competition. That is, the focus in the literature has been on industries with a limited number of dominating firms and where the outcome of a competitive move (e.g. a price change or the introduction of a new product) depends more or less on the reaction of rivals (cf. Porter, 1980). This focus can be seen through the strong emphasis in the market orientation construct on analysing competitors at an *individual* level. For example, according to Narver and Slater (1990) market-oriented firms should analyse key current and potential competitors in terms of their entire set of technologies for satisfying the focal firm’s target buyers. Whereas this focus certainly seems warranted in oligopolistic markets, it may not be equally applicable to firms operating in markets where conditions come close to the economist’s “ideal” of perfect competition. When the number of suppliers of the same products is multiple, e.g. several hundreds of similar competitors, it becomes almost impossible to take all of them into account – such a task would be far beyond the limits of their time, economic resources, and cognitive capacity. Rather, firms will try to assess some more aggregate market trends. The lack of focus on market orientation in highly competitive, close to “perfect” markets, is surprising. In one of the most cited contributions in the market orientation literature, the authors state that (Kohli and Jaworski, 1990, p.15):

“...the benefits afforded by a market orientation are greater for organizations in a competitive industry than for organizations operating in less competitive industries.”

In spite of this, the extant literature says very little about market orientation in industries that are close to “perfect” markets, i.e. probably the most competitive situation a firm can be in. This is an important void in the literature because many industries face conditions that come close to the ideal of “perfect” competition. For example, in industries based on natural resources, products (e.g. certain types of seafood) have relatively few attributes and are thus rather homogeneous. In such industries there are often multiple sellers and buyers, information flows easily, and transaction costs are rather low. An intriguing and under-researched question is how firms operating in highly competitive “perfect” markets perceive and practise market orientation.

Furthermore, in current research on market orientation it is often assumed that information about the marketplace can rather easily be collected, understood and exploited by the market-oriented firm. For example, Kohli and Jaworski (1990, p.6) define market orientation in the following way:

“Market orientation is the organizationwide *generation* of market intelligence pertaining to current and future customers needs, *dissemination* of the intelligence across departments, and organizationwide *responsiveness* to it”.

This definition and the underlying discussion provided by the authors (pp.4-5) suggests that the market-oriented firm is perceived as *the* active part “monitoring” and “scanning” its current and future market(s). This view is reflected in other contributions as well. For example, Day (1994, p. 9) claims that: “market-driven firms stand out in their ability to continuously sense and act on events and trends in their markets”. Whereas some firms will clearly be better than others in such informational activities, the perspective offered seems somewhat unrealistic. There are several reasons for this. First, the information-processing capacity of managers and their organisations is rather limited. In an increasingly competitive and turbulent environment, firms and their management are exposed to far more information (data) than they can possibly assimilate and comprehend. This relates to the fact that managers are busy people, continuously confronted with a wide range of tasks and demands (cf. Mintzberg, 1973). And, as other people, managers (and their firms) are restricted by the limits of their cognitive capacity, i.e. their capacity to notice, interpret, store and make use of data is restricted (Simon, 1957). Thus, although they may try to the best of their abilities to actively collect, interpret and make use of market data, their limited time and cognitive capacity make it difficult to be such “proactive” agents, monitoring and scanning their markets, as portrayed in the market orientation literature. Second, firms depend on a range of constituencies for critical resources such as labour, capital, raw materials, information, and markets willing to buy their output (Pfeffer and Salancik, 1978). Thus, they must allocate their limited informational capacity to attend to and understand the needs and wants of a range of sectors - not only customers and competitors (cf. Greenley and Foxall, 1996; Kimery and Rinehart, 1998). Third, firms’ informational activities can be restricted by their strategic networks (cf. Gulati *et al.*, 2000). To obtain necessary inputs and to provide competitive outputs, firms *interact* with a range of different actors in their surrounding environments. For example, firms obtain valuable information about external opportunities and threats through interactions with customers, consultants, research universities, and other knowledgeable

actors. However, due to their limited informational capacity, firms only have time and resources to interact with a *limited* number of actors at any point in time, which means that firms, by making choices to interact or ally with some partners also exclude others. According to Gulati *et al.*, (2000), the result is that firms are locked in or “captured” in their existing networks, and thus locked out of other networks. Even very loose relationships or single encounters with external actors draw on the limited time and resources that organisations possess. This implies that the structure of firms’ networks is crucial, both because networks provide access to resources and information, and because networks may impair firms’ access to significant actors, which may have emerged through recent environmental changes. In rapidly changing and increasingly complex environments, it may be difficult for management to sort out the actors or environmental sectors that are really significant to the firm. And, importantly, in dynamic environments, choosing with whom to interact may not always be a matter of deliberate choice, as external actors may be the ones who initiate interactions, *not* the focal firm. Such initiatives may be unexpected and come and go in accordance with the changing needs and demands of the *other* actors. For example, consumers are less willing to be passive participants in the marketing process (Day and Montgomery, 1999). This is illustrated by the fact that consumers, and other types of customers, frequently express their opinions via complaint behaviour. It should also be noted that customers often play an active role in product development (see e.g. Kristensen, 1992; von Hippel, 1986).

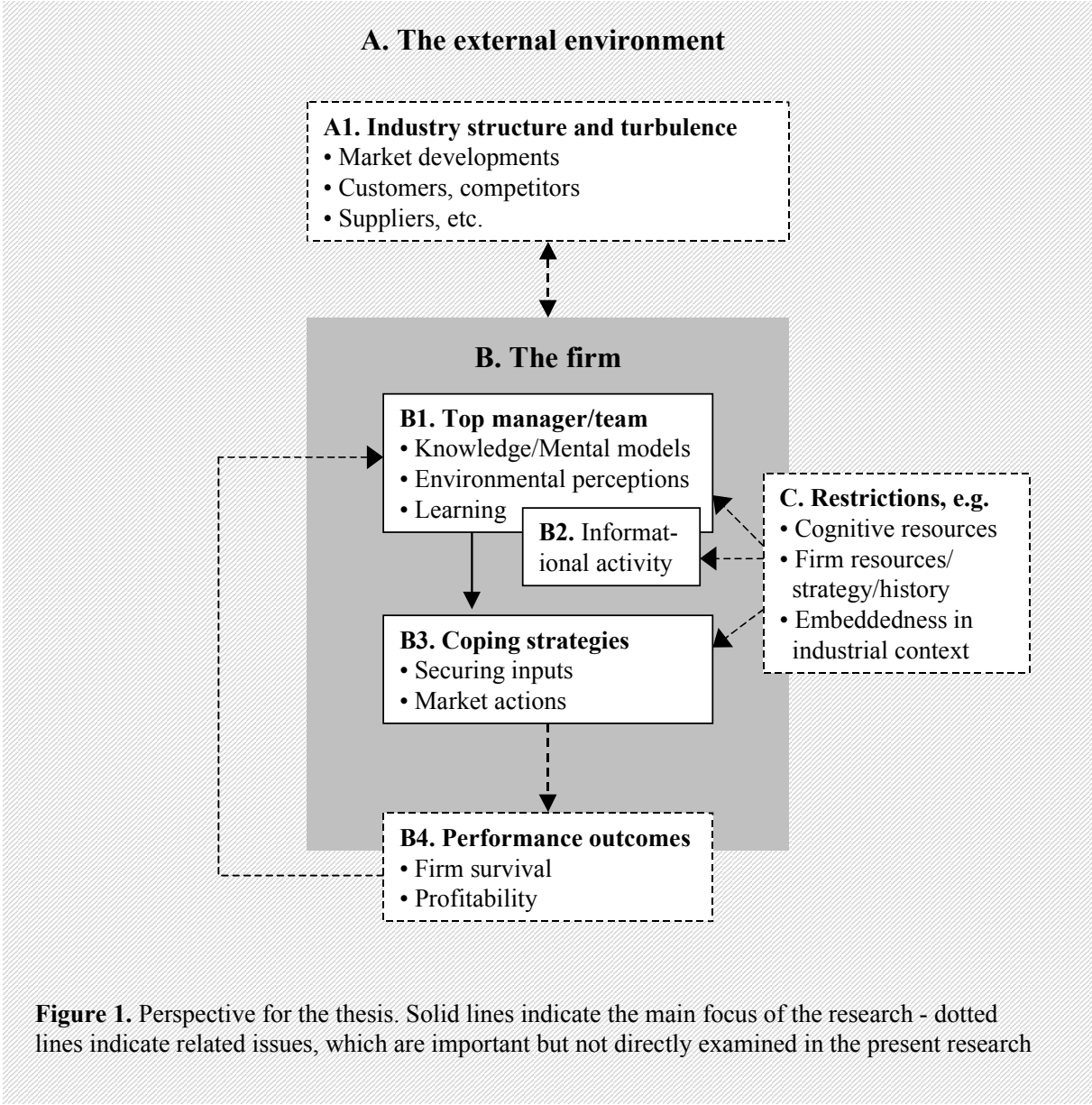
From the above discussion it follows that, although the market orientation construct can be beneficial to firms, there is a substantial lack of insight regarding whether and how firms and their management adopt and make use of the ideas of market orientation. In addition, the market orientation construct as we know it from the research literature might not “fit” the contextual realities facing firms operating in, for instance, highly competitive “perfect” markets and/or facing highly turbulent supplies of critical input factors. The research literature also seems to be overly optimistic in terms of firms’ ability to collect and exploit market information. Thus, an interesting question underlying this thesis is whether managers can sort out the “mismatch” between abstract “theory” and their contextual realities in order to benefit from the ideas of the market orientation construct.

The thesis addresses the criticism and questions raised above. This is done by focusing on how managers understand the market orientation concept, including how their understanding is influenced when they operate in turbulent supply environments and/or in highly competitive “perfect” markets, and in turn how this affects their goal-directed behaviours. In this way, it is possible to gain insights into how firms and their managers

perceive and practise market orientation, as well as how this is done in two types of environments not covered by previous research. The thesis also addresses how firms and their management can engage in knowledge-enhancing activities in order to compensate for their limited informational capacity.

# Perspective

This section describes the perspective which underlies the present research. The perspective relates to the discussion presented above, and provides a framework that has guided and directed the research. The perspective is presented in Figure 1.



**Figure 1.** Perspective for the thesis. Solid lines indicate the main focus of the research - dotted lines indicate related issues, which are important but not directly examined in the present research

The perspective in Figure 1 is explained in the following. Firms are embedded in ever-changing environments (A). To operate effectively and thus to perform well, firms need regular inputs. This follows from the input – throughput – output paradigm, which states that



firms' value creation is brought about by transforming input factors (e.g. capital, labour, technology and information) into valuable products and services that can stand up to the competition in the output market (cf. Katz and Kahn, 1978). Firms' external environment (A) can be characterised and described in various ways, for instance, in terms of turbulence (A1). Turbulence refers to more or less unanticipated changes in the external environment. This implies instability, which may make the acquisition of various input factors uncertain. Uncertainty is a fundamental problem for organisations, because firms' performance depends heavily on adequate utilisation of capacity, imposing fixed costs (Thomson, 1967).

A prime reason for environmental turbulence can, as noted in the foregoing discussion, be that the supply of critical input factors is unstable and unpredictable. Another factor that may cause turbulence in the environment is that multiple actors depend on various inputs to operate effectively. Such inputs are seldom in abundance. Therefore, actors in their goal-directed efforts to perform well, try to "secure" their necessary inputs. This leads to competition, which often implies turbulence. There are several reasons for this. For example, when firms operate under oligopolistic market conditions, it is often difficult to foresee competitors' moves and reactions, which may produce unintended outcomes, which in turn leads to more or less unpredictable actions and reactions and thus turbulent conditions (Porter, 1980). In highly competitive industries consisting of a large number of independent firms, the individual firm is not affected by the actions of other individual actors, but rather responds to overall market conditions (Porter, 1980). Such markets are seldom stable. Rather, they are characterised by fluctuations caused by a large number of relatively insignificant actors who try to anticipate and take advantage of market changes. In this situation, each individual actor reacts to the signals he or she gets. For example, in the Norwegian salmon farming industry, several organisations provide regular (weekly) data on industry and market trends, e.g. production volume and market prices. This information is easily available to all actors. When such information shows, e.g. that supply is increasing and that price trends point downwards, the individual producer is likely to hold back on sales in anticipation of higher prices. When multiple actors react similarly, supply will decrease below demand and lead to higher prices. This in turn attracts a surplus of products so that supply exceeds demand, again resulting in lower prices. In this way, highly competitive markets may become rather unstable and turbulent.

Competition may create turbulence, not only in the product market, but also when actors compete for other types of resources as well. Firms compete for a wide range of inputs, e.g. the best available technology, the most reliable and competent suppliers, or they compete

for the most timely, reliable and relevant information<sup>1</sup>. Competition in different arenas between actors with different resources and motivations leads to turbulent conditions, making it difficult to obtain needed inputs.

In this thesis, the prime focus is on top managers (B1). The main reason for this focus is that top managers are assumed to play a central role in guiding and directing their firms (Cyert and March, 1963; Hambrick and Mason, 1984). This holds true in particular in small- and medium-sized firms, which are focused upon here. In such firms, the top manager is the prime decision-maker, has everything at his or her fingertips, and knows what is going on. Thus, by focusing on how the top management think and act, it is possible, at least to some extent, to “capture” how the firms think and act.

In small- and medium-sized firms, upper management usually consists of a managing director, whose main responsibility is to run the company. Managers responsible for different functional areas (e.g. finance, marketing and production) usually assist the top manager in decision-making. In this way, the top manager and his or her functional managers may constitute a top management team. The number of team members depends on several factors such as the size of the firm and the complexity of its operations.

To guide and direct their firms in a successful manner, managers acquire and use two principle types of knowledge. First, knowledge about how to proceed in a given situation is needed, e.g. how to adequately analyse customers and their needs and wants. This is referred to as *procedural* knowledge (cf. Anderson, 1983). Managers also need detailed *contextual* knowledge, for instance about market size and developments (cf. Anderson, 1983). Such knowledge is needed because firms are context-bound and thus knowledge about the actual context in which they are embedded is needed to operate rationally. To develop these two types of knowledge, managers often go through extensive training and education, and they learn through their experiences. For example, by observing and reflecting over the outcome of their firm’s market actions (B4), managers may acquire new insights into what works and how to act (cf. the feedback loop between B4 and B1 in Figure 1). Gradually, managers become experts in their domains. However, to become true “experts”, managers, like other

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<sup>1</sup> Recently, it has also been argued that firms and other market actors compete, not only at the level of material resources and information, but also at a sociocognitive level. Rindova and Fombrun (1999) argue that firms compete for favourable positions in the socially constructed competitive terrain constructed by the interpretations of important actors. For example, definitions of success, which are socially constructed, contribute to a firm’s competitive advantage by affecting actors’ overall position in the interpretational domain that surrounds industries (Rindova and Fombrun, 1999). Competition over interpretations leads to turbulent conditions, which makes it difficult to obtain favourable interpretations among other actors.

individuals, need to go through extensive training and learning, which lasts at least 10 years (Simon, 1991).

As noted in the previous section, firms and their management need to conduct informational activities (B2) to update their knowledge and thus to learn (B1). It is the responsibility of top management to initiate and facilitate the implementation of appropriate coping strategies (B3), which may (or may not) lead to favourable outcomes such as firm survival and profitability (B4).

Firms, in their efforts to learn and adjust to their surrounding environment, are restricted by a number of factors (C). For example, as noted in the foregoing discussion, managers have limited time and cognitive resources, which restricts their informational activity (B2). In addition, managers, like other individuals, are guided and restricted by their “mental models”, i.e. their mentally constructed “road-maps” of what works and how to act (Johnson-Laird, 1983). Importantly, such mental models can, if appropriate for the current domain, lead to improved access to information and understanding and thus help managers cope in turbulent environments. However, mental models may also lead to negative outcomes such as the neglect of crucial information, and lead to erroneous environmental perceptions (Barnes, 1984; Starbuck and Mezias, 1996; Sutcliffe, 1994). It is also important that knowledge structures tend to be rather rigid (Sanford, 1987), which makes it harder for managers (and others) to update their knowledge structures and thus to learn (for excellent illustrations see e.g. Argyris, 1991 and Levitt, 1960).

Firms and their managers can also face restrictions in their ability to affect important organisational outcomes (Hambrick and Finkelstein, 1987). For example, firms’ resources (e.g. capital, skilled labour and technology) may influence and limit the possible actions a firm can take. Also, firms’ past history and current strategy influence the scope for action or leverage management has. Obviously, a top manager is substantially restricted by the current strategic direction of his or her firm.

Finally, firms’ ability to learn and act can be restricted by their embeddedness, i.e. their pattern of interactions and relationships with various external actors, as discussed earlier. All these interactions draw on firms’ limited informational capacity and may thus impair their access to important information. It should also be noted that the more or less unanticipated initiatives and demands of external actors could disturb and distract firms in their goal-directed attempts to be proactive learners.

## The Research

The present research is reported in the form of a “collection of articles” rather than a “monograph”. The main reason for this was a desire to examine and explore several different aspects related to how the market orientation concept is understood and practised by firms embedded in highly turbulent and competitive environments. This led to distinct approaches in terms of research questions, theory and data requirements, which were best reported as separate studies (these are presented in Part II of the thesis).

In their own way, each of the six articles presented has some unique aspects. However, they can be categorised in terms of how they contribute to the overall purpose of the thesis. Accordingly, papers I, II and III, focus on how firms understand and use the market orientation concept, and whether and how this is influenced by a turbulent supply environment and a highly competitive “perfect” market. In Paper I, an empirical study was designed to examine whether and how four top managers in different firms in the highly competitive salmon farming industry understand and practise the market orientation concept. In Paper II, two groups of upstream actors exposed to different levels of supply uncertainty (i.e. high versus low) were investigated in order to understand whether and how their market-oriented thinking and behaviour is affected by this type of turbulence. Paper III focuses specifically on how actors exposed to high levels of uncertain supply cope to compete effectively in their output markets. Ten firms (and their top managers) in the whitefish industry were selected for this study. This industry is characterised by very high levels of supply uncertainty.

Papers IV, V and VI focus on managers’ and their firms’ informational activities. The adequate and timely collection and use of information is a crucial dimension of the market orientation construct. However, as discussed in the introduction, the market orientation literature holds unrealistic expectations regarding firms’ ability to collect and exploit information. Thus, in accordance with the perspective outlined above, papers IV, V and VI, focus on how firms and their management can – within the restrictions of their limited informational capacity – engage in knowledge-enhancing activities. Specifically, paper IV provides a study of how managers, by exploiting the benefits afforded by a team, can enhance their access to information and understanding. Paper V focuses on firms’ strategic networks and examines factors which affect firms’ ability to adjust positions in, and take advantage of, their external information network. Finally, paper VI focuses on firms’ acquisition of new

information by contracting with external researchers to conduct specific research tasks. Here, a crucial concern is how differences in researchers' and users' knowledge and thinking can impair the use of the acquired research information, as well as how these differences can be reduced to enhance information use.



## **PART II**





## The Papers

- Paper I:** Managers' Understanding of Theoretical Concepts: The Case of Market Orientation
- Paper II:** Market Orientation and Uncertain Supply in Upstream Markets: An Exploratory Study
- Paper III:** Coping Strategies in Highly Turbulent and Competitive Supply Environments
- Paper IV:** Do Managerial Team Members Share Mental Models of Market Orientation? An Exploratory Study
- Paper V:** Exploring the Accuracy of Managers' Network Perceptions
- Paper VI:** Benefiting from Commissioned Research: The Role of Researcher – Client Cooperation







# **Paper I: Managers' Understanding of Theoretical Concepts: The Case of Market Orientation\***

Forthcoming in *European Journal of Marketing*.

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\* An earlier version of this paper was published in O'Cass,A.(Ed.) (2000) *Visionary Marketing for the 21<sup>st</sup> Century: Facing the Challenge*. Proceedings of the ANZMAC 2000 Conference, Griffith University, Gold Coast, Australia, 28th November - 1<sup>st</sup> December. The authors thank two anonymous reviewers for the *European Journal of Marketing* for their valuable comments and suggestions.



# **Managers' Understanding of Theoretical Concepts: The Case of Market Orientation**

Geir Grundvåg Ottesen  
and  
Kjell Grønhaug

## **Abstract**

Managers are frequently exposed to abstract, theoretical concepts, of which some are attended to while others are neglected. To become meaningful for managers, new abstract concepts must be reflected upon and given content. In this paper, we explore how and to what extent managers understand and make use of the exemplar concept of “market orientation”. The reported findings indicate that managers’ understanding and use of the concept of market orientation, in their goal-directed effort to perform, are influenced by the actual context in which they are embedded and operate. Our findings also indicate that managers’ understanding of market orientation can deviate substantially from the meaning reflected in the academic literature.

*Key words:* managers, theoretical and personal concepts, market orientation, performance.

## **Introduction**

This paper addresses how and to what extent managers attend to new management concepts, and how concepts attended to and reflected upon influence their thinking and behaviours. Much academic research within marketing is concerned with developing and refining theoretical constructs. In such efforts, theoretical and empirical insights are usually derived from the researchers’ “perspective”. The resulting theories and concepts aim to provide understanding, explanation and prediction of phenomena (Frankfort-Nachmias and Nachmias, 1992). Usually, it is assumed that managers and other practitioners adopt and make use of new theories and concepts in order to improve their understanding and ultimately to perform better. New theories and concepts offered are multiple and their popularity may vary over time (Abrahamson, 1996; Carson *et al.*, 2000; Huczynski, 1993). Managers may learn about

new concepts and theories in various ways, e.g. by attending presentations, reading the research literature and interacting with others such as managers and consultants. Managers may also modify and construct theories and concepts (cf. Galotti, 1994). Regardless of how they are acquired, the concepts held are important because they give focus, drive attention, and contribute to what is noted. Relatively little is, however, known about how managers make sense of and use new theoretical concepts. It should also be noted that present insights are modest regarding the extent to which the intended meanings of theoretically defined concepts overlap with how they are understood by practitioners.

In this study, we address these concerns by exploring how managers make sense of the exemplar concept of “market orientation”. The choice of market orientation has been made for several reasons. Since the contributions by Kohli and Jaworski (1990) and others began attracting attention a decade ago the construct of market orientation has received considerable interest among marketing scientists. Over the years, the concept of market orientation has been refined and extended. Operational measures have been developed and applied to capture the construct empirically (e.g. Kohli *et al.*, 1993; Narver and Slater, 1990). The consequences of being market-oriented have been examined as well. In empirical studies, market orientation has been found to have a positive impact on a range of performance variables such as new product development and profitability (e.g. Jaworski and Kohli, 1993; Narver and Slater, 1990). Second, the intended meaning of the theoretical concept of market orientation is available through a substantial number of journal articles, including management-oriented journals such as the *Harvard Business Review* (e.g. Shapiro, 1988) and *California Management Review* (e.g. Day, 1994). Third, the widespread “propaganda” in favour of being market-oriented has seemingly influenced the diffusion of this concept and contributed to it becoming a part of managers’ vocabulary. Fourth, due to incentives for managers to improve (e.g. they are perceived to be responsible for the performance of their organisations) and the claimed benefits of market orientation, we believe that managers are motivated to attend to, try to make sense of and implement the ideas underlying the market orientation construct.

From the above discussion it follows that “market orientation” makes a good “case” for exploring how managers make sense of a well-known concept, including to what extent their understanding overlaps with the intended meaning of the theoretical concept. It should be noted that researchers have yet to arrive at a consensus definition of the meaning of market orientation. However, the research literature agrees on several important points. For example, all studies of market orientation hold that a focus on customers’ needs and wants is the core element of market orientation. Competitors are also usually included in the domain of the



concept (e.g. Dickson, 1992; Narver and Slater, 1990). Another important point is that most studies have adopted an information processing perspective on market orientation (e.g. Kohli and Jaworski, 1990; Day, 1994; Slater and Narver, 1995). This implies that market-oriented firms are assumed to stand out in their ability to collect, interpret, disseminate and respond to information about customers and competitors. Finally, it should be noted that independent firms and strategic business units are the most frequently used level of analysis for studies of market orientation. This is also the case in the present study.

The remainder of the paper is organised as follows: We first address the situation of managers. Here we also explain why and how managers acquire new concepts. In doing so, we also address some key characteristics and functions of concepts, and what is required to transform an abstract concept into a meaningful “thinking tool” (Zaltman *et al.*, 1982), influencing managers’ (and others’) thinking and enabling them to act purposefully in their embedded context. We then describe our research, an exploratory study encompassing four firms in the Norwegian fish farming industry. Then we report our findings. Finally we draw conclusions and highlight their implications.

## **Theoretical Perspective**

In this section we focus on the situation of managers, on why and how they acquire new concepts while ignoring others. We also discuss how concepts are transformed from abstract “labels” to becoming a part of a manager’s repertoire of personal concepts. Because the “reality” of managers (and other individuals) is constructed and grasped through the concepts they hold and how these concepts are understood and used, managers’ (and other users’) understandings of concepts become crucial. Managers’ personal understanding of market orientation is assumed to influence their understanding of “the market reality” and therefore influence their decisions and actions.

Managers are by definition visible and held responsible for organisational performance. They are confronted with multiple tasks and demands and there is seldom room for extensive reflection (Mintzberg, 1973). Managers try to exhibit purposeful behaviours, constrained, however, as other individuals, by their limited cognitive capacity, i.e. they have limited capacity to notice, interpret, store, retrieve and make use of data. This does not mean that managers behave irrationally, but rather, as emphasised by Simon (1957), that “... the behaviour exhibited by the actors is intentionally rational, not only limited so” (p.xxiv).

To behave rationally (within their cognitive limitations), managers need knowledge. Insights, or knowledge, can be obtained in multiple ways. For example, they observe the outcomes of their own decisions and activities, and thus they can learn by “trial and error”, even though such learning can be imperfect (Levinthal and March, 1993). Organisations and their managers may also learn from observation and imitation of competitors, as dealt with in the extensive literature on imitation and mimetic processes (see e.g. Galaskiewicz and Wasserman, 1989; Haveman, 1993). Such focus can, however, be narrow and result in inadequate behaviour, as demonstrated in Levitt's (1960) classical *Harvard Business Review* article, “Marketing Myopia”. In his article, Levitt showed how whole industries faded away because management did not discover the eroding changes that had occurred.

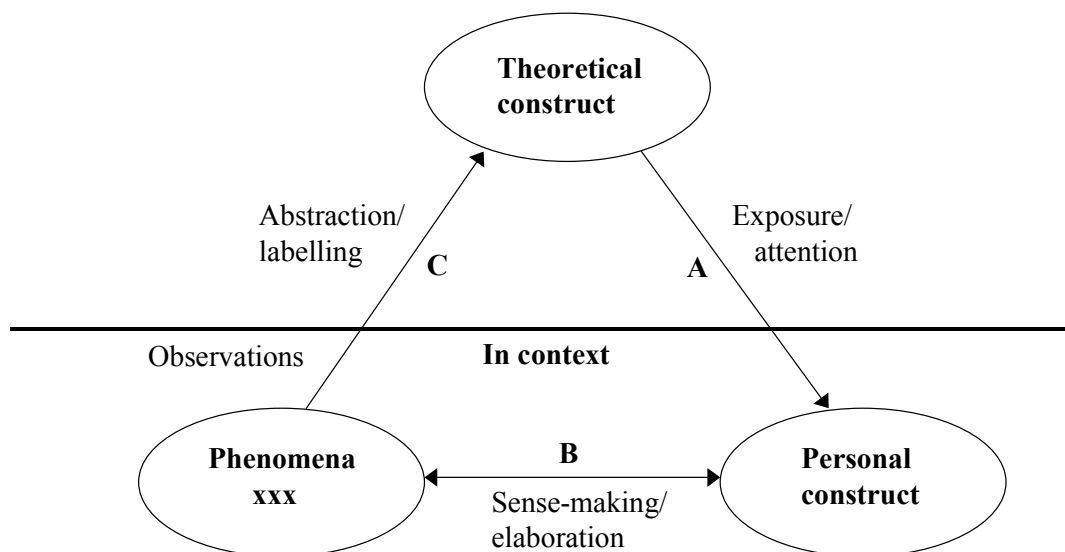
To act, managers need knowledge about how to proceed, e.g. how to analyse competitors and customers, how to negotiate and so on, i.e. *procedural knowledge*. They also need knowledge about their actual competitors, their strategies, market size and developments, etc, i.e. *declarative* or contextual knowledge. Such knowledge is needed because firms do not operate in a vacuum. They are context-bound and thus knowledge about the context in which they are embedded is needed to operate rationally. In other words, managers, like others, need and make use of both procedural and contextual knowledge.

### *Concepts*

Concepts serve several important functions (for insightful discussions, see Zaltman *et al.*, 1973). Concepts are the “building blocks” of any model, theory or explanation. When first confronted with a new concept (e.g. “market orientation”), it is very much like being confronted with a new “label”. Although it may attract attention, it contains little content and can seldom be applied adequately by the learner. To become useful for managers, new concepts must be given content and adjusted to the actual context in which they operate. This relates to cognitive processes involved in categorisation, i.e. basic cognitive activities related to conceptualisation and understanding (cf. Rosch, 1978). Categorisation influences the noticing and interpretation of stimuli (data) as well as what data are noted and how they are structured. As argued by Rosch *et al.* (1976), actors’ categories mainly develop through interactions with their environment. For example, studies of how managers perceive competitors show that perception is influenced by the particular categories they use (Gripsrud and Grønhaug, 1985; Porac and Thomas, 1989).

Through interaction, reading, attending speeches and presentations, watching television and listening to radio, managers are exposed to a range of new concepts and management ideas. In their efforts to improve, managers pay attention to such ideas and concepts. This is easily observed by looking at the focus on management “gurus” and the willingness to pay for their presentations and advice (Byrne, 1986).

When exposed to a new concept (capturing an idea or perspective, e.g. “market orientation”, “business process redesign” or “total quality management”), managers, like other individuals, already possess more or less established knowledge structures or mental models. It has long been recognised that actors’ knowledge structures are relatively stable and can be rather rigid (Sanford, 1987). New data and concepts may be integrated into existing knowledge structures and will thus not impact the actors’ thinking. Exposure to and reflection upon new concepts and ideas may, however, also result in cognitive learning, changing the learners’ insights and understanding. Such learning is, however, often time-consuming and requires motivated effort (Johnsen *et al.*, 1991). This is illustrated in Figure 1.



**Figure 1. From Abstract, Theoretical Constructs to Personal Constructs.**

Figure 1 is to be read in the following way: Theoretical constructs exposed and attended to (arrow A) can, through sense-making and elaboration within the actors’ immediate context, become personal constructs (arrow B). The latter imply that the concept as understood by the actor relates to actual phenomena s/he subsumes under that concept. The process of constructing theoretical concepts is, however, in many ways the opposite, i.e. moving from the “concrete” to the abstract (cf. Arrow C in Figure 1). The researcher observing some

phenomenon  $x_i$ , can initiate the construction of a new concept. A relevant example here is Kohli and Jaworski's (1990) effort to construct the market orientation concept: Besides an extensive literature review, they also conducted empirical research. More specifically, they conducted in-depth interviews with 62 managers in 47 organisations in four U.S. cities. Furthermore, two managers and 10 business academicians at two large U.S. universities were interviewed. From this mass of observations, Kohli and Jaworski created the abstract construct of "market orientation", which consists of three conceptually distinct dimensions, i.e. (1) generation, (2) dissemination, and (3) responsiveness to market information. In a subsequent study, the construct underwent further refinement and testing using a sample drawn from the Dun and Bradstreet list of the top 1000 U.S. firms (Kohli *et al.*, 1993). In some cases the concept constructors also define their constructed concept, i.e. pointing out what is unique to the concept (cf. Frankfort-Nachmias and Nachmias, 1992; Zaltman *et al.*, 1973), which is a prerequisite for adequately operationalising it. An example is Kohli and Jaworski's focus on key aspects of being market-oriented.

Present insights regarding whether and how managers understand and use the concept of market orientation are modest. Managers' attention and understanding are influenced by a range of factors such as educational background, the activities they are involved in and established knowledge structures (see e.g. Dearborn and Simon, 1958; Starbuck and Mezas, 1996). Consequently, we believe that the understanding of the market orientation construct, as well as marketing activities performed, may vary across managers even when operating in the same industry. Present insights, however, do not allow for precise predictions about such variations in understanding and subsequent behaviours.

## **Research Methodology**

Due to modest a priori insights, an exploratory approach was chosen in the present study. In our research, we chose to focus on top managers. The reason for doing so is the crucial role of top managers, particularly in small- and medium-sized firms, as is the case here. In such firms, the top manager is the prime decision-maker.

Four managers in charge of medium-sized firms in the Norwegian salmon farming industry were selected as units of observation. The industry consists of multiple actors involved in activities such as farming, processing and exporting different types of salmon products (ranging from "bulk" products such as whole gutted fresh salmon to consumer packs of smoked and sliced salmon). Some firms concentrate on farming only, while others are

engaged in multiple activities, e.g. farming and processing and/or exports. More than 95% of the industry's total production is exported. By selecting firms that vary greatly with regard to the value activities they are involved in, we have tried to obtain variation in the firms' (and managers') immediate contexts (Campbell, 1975), which are believed to influence the understanding and use of market orientation. Table I shows key characteristics of the firms and managers included here.

**Table I. Some Characteristics of the Firms and their Top Managers**

	Alpha	Beta	Delta	Gamma
1. Established	1986	1973	1991	1990
2. Activities	Farming	Farming/ Processing/ Exports	Farming/ Processing/ Exports	Exports
3. Sales (mill NOK 1997)	93	93	227	320
4. ROI (1997)	3,4%	12,4%	8,7%	11,9%
5. Customers	Norwegian exporters. 5 customers take 50% of sales.	Wholesalers/ institutions in, e.g. US, Japan, Canada. 5 customers take 50% of sales.	Mainly importers in Japan. 5 customers take 50% of sales.	Importers/ Wholesalers in, e.g. Russia, Japan, EU. 5 customers take 50% of sales.
6. Educational background of managers	Engineering (fish farming). Commercial college.	MBA	Commercial college.	Master of Science in fisheries (included courses in marketing).
7. Experience of managers	Managing director for 19 years, first in another division of the group, then in the salmon division for the last 13 years.	10 years in food industry before 5 years in the salmon farming industry, for the last 2 years as manager.	In the salmon farming industry for the last 15 years. Last two years in the firm.	Worked in the salmon farming industry for the last 18 years. Has been 5 years with the firm.

Inspection of Table I shows that the top managers all have extensive experience in the industry. It should also be noted that the firms vary in activities and markets/customer groups and that for all the firms a rather modest number of customers account for a substantial share of total sales.

To gain insights regarding the firms, their activities and performance, and their managers' interpretations of market orientation, we made use of multiple data sources. Secondary printed information, including annual reports, articles in the business press and accounting data from Dun and Bradstreet allowed us to trace the turnover and profitability of the firms included over a number of years.

In order to capture managers' thinking about market orientation, we conducted lengthy, semi-structured interviews to complement the secondary data. After the senior manager had been identified in each of the firms, appointments for the interviews were made prior to the interviews. General, broad questions formed the basis for discussions with the managers, e.g.: "What does market orientation mean to you?" and "What does a market-oriented firm do?" We asked for and tried to elicit the subjects' own interpretations of market orientation. The interviews showed that the managers were well acquainted with the concept of market orientation.

When confronted with a well-known concept or label (e.g. "market orientation"), managers are assumed to focus on and recall aspects central to their understanding of that concept. Because market orientation represents a specific way of thinking and behaving, it is also believed that managers hold ideas about influencing factors as well as the consequences of being market-oriented. This implies that "market orientation" has some kind of mental representation that can be captured by the researcher (Huff, 1990).

The interviews took place very much like conversations, with emphasis on letting the subjects play the active role. All interviews were tape-recorded and transcribed. The transcribed interviews were content-analysed by carefully inspecting the interviews, identifying and comparing subjects' use of words (categories) in order to understand how they had assigned meaning to the concept of market orientation. To allow the reader to assess our interpretations and conclusions, we report excerpts from the interviews (Kirk and Miller, 1986).

## **Findings**

In this section, we present our findings regarding managers' understanding of market orientation. We first report how managers make sense of the concept of market orientation and proceed to report how and to what extent they relate market orientation to company profitability.

### *Market Orientation*

The managers interviewed had few problems – if any – in explaining what *they* meant by market orientation. This indicates that the managers not only have been exposed to the

concept but also that they have thought about and developed some understanding of it. The latter is evidenced by the fact that the managers varied in their interpretation of market orientation, as reflected in the quotes reported below. The first quote shows that this manager focuses on timing, product demand and markets (customers), i.e.:

“You must produce what the market wants, not only what, but also *when* it is demanded” (our italics). (Beta)

The focus on “what the market wants” is very much in line with the literature on market orientation, where responding to customer demands is the cornerstone. However, this manager goes somewhat further than the extant literature on market orientation, as he also emphasises timing. This indicates that the manager’s thinking about the market includes rather complex relationships, as consideration of timing would have to include anticipation of how different market forces affect demand and prices (this issue is discussed in more detail in a later section). This shows that when concepts are developed they become more fine-grained, incorporating hierarchical relations between subcategories of the broader concept (Huff, 1990). Another quote demonstrating reflection on the concept of market orientation is:

“One of our sellers says that it’s the customers who decide what we should produce” Our probe, “Do you do so?” produced the following answer: “No”! (Alfa)

The manager follows up his reasoning by addressing factors influencing profitability, e.g. how water temperature influences the growth rate of salmon. This indicates that, in an attempt to act purposefully (e.g. earn profits), this manager attends to several critical issues. Another manager reflected in the following way:

“For us as producers it [market orientation] is primarily about becoming aware of what the market demands.” (Delta)

This statement indicates that what the market (customers) demand(s) is perceived as important (in agreement with what is emphasised in the literature on market orientation).

Must a manager necessarily use a concept explicitly for it to influence his or her thinking? The following quote might give some insight into this question:

“I don’t use the word (“market orientation”), but we have to be market-oriented” (Gamma)

This quote is interesting in several ways. First, it indicates that the manager is aware of and has some personal understanding of the concept. In addition, it reflects the fact that he conceives forces related to the market (not specified here) as important, and that he (the firm) is trying to consider such factors. Indirectly, the quote may also indicate that managers make use of other concepts than those reflected in the academic literature to understand and explain the same phenomena.

Inspection of the above quotes shows that the managers have adopted the concept of “market orientation”, and in doing so, they relate the concept to demand and customers, as well as to other factors believed to influence profitability. This indicates that they think in “causal” terms and try to exhibit purposeful behaviours, as assumed in the literature on mental models (Sanford, 1987).

The literature on market orientation frequently stresses that competitors must be monitored to stay competitive (Dickson, 1992; Narver and Slater, 1990). What do these firms do? Only one of the four managers mentioned competitors, as shown in the following quote:

“We map the needs of our customers and monitor our competitors. If we discover that some [competitors] have lower prices than we do, we have to find out why.” (Gamma)

Gamma is a “trader”, buying whole gutted salmon from farmers and selling it in a highly competitive global market. In this situation, a single competitor’s price bidding hardly affects the “market”. The interest in competitors’ prices can more likely be attributed to the possibility that such prices (and price changes) may hide other issues of interest, e.g. a new favourable contract with farmers that makes it possible to sell at a lower price without reducing margins, or some innovations that result in cost reductions. Thus, competitors’ price bids provide a “signal” which triggers Gamma’s manager to search for underlying issues, which in turn may reveal new practices that can be imitated. This indicates that firms and their managers are keen to learn from their observations and imitations of competitors (cf. Galaskiewicz and Wasserman, 1989; Haveman, 1993). In general, however, the managers studied do not seem to have a clear “picture” of their competitors either in terms of specific firms, or in terms of “prototypical” competitors (cf. Porac and Thomas, 1990). And as noted above, only one of the four managers related competitors to the concept of market orientation. How can these observations be explained? Apparently, it is more important for the managers interviewed to understand how different market segments “behave” in terms of supply and demand variations than it is to understand the behaviour of specific competitors in these



markets. Our interpretation is as follows: In the markets where these firms operate, opportunities for making profits are “driven” by factors beyond the influence of specific competitors. The ability to compete effectively is likely to be determined by the ability to foresee or anticipate changes in the supply of salmon and how the “market” will react to such changes, in line with Abell’s (1978) idea of “strategic windows”. As noted above, the managers also focus on “specific customers”. These observations imply that the managers need market information to learn what is going on, adjust and act. As emphasised in the market orientation literature, the gathering of market information plays a crucial role in market orientation (e.g. Day, 1994; Slater and Narver, 1995). What do these firms and managers do? The following quotes show that adequate information is conceived as important, but that such information is not necessarily easy to get, i.e.:

“The problem is to find the information needed in the actual situation. (...) It is not always possible to ask customers what they want. Of course, you can take the plane to Japan and discuss things with customers. Once in a while ideas for improvements and new products come up this way.” (Beta)

“We feel it’s difficult to keep ourselves updated with regard to the [changing] quality requirements among customers.” (Delta)

“Often customers with specific ideas visit us.” (Beta)

It is also interesting to observe that they have learnt that asking questions is not always relevant, but that interactions with customers can sometimes be useful, and that customers can be an active “advice-giving” party. The latter is emphasised in the literature on new product development (see e.g. von Hippel, 1986). The quotes also reflect the fact that the information processing capacity of the managers (and their firms) is rather modest. The following quotes show that managers may make use of different sources (or channels) to keep themselves informed, i.e.:

“To keep ourselves informed, we inspect the information from Kontali” (a bureau reporting information on current and anticipated production volume, sales, prices, etc.). (Alfa)

“I gather the information I need through the ‘jungle telegraph’”. (Gamma)

“We watch the prices. We gather price information so we can obtain the most (profit) ourselves.” (Alfa)

Inspection of these quotes also shows that the information (data) attended to is influenced by the actual context. The last quote also indicates that the market is competitive and the firms are mainly “price takers”, that there are multiple suppliers, and the products offered are low to modestly differentiated. It is also seen that the managers’ (firms’) information environments vary, and that their information gathering is rather informal. This indicates that, although they survey intensively, gather and utilise information about their market(s), they would score low on, e.g. the MARKOR scale (Kohli *et al.*, 1993).

### *Activities and Profitability*

From the above discussion it follows that the managers studied relate market orientation to profitability. In fact, their focus seems to be on rather complex relationships between various activities and the assumed impact on profitability, i.e. the emphasis is on causal, goal-directed thinking (and doing), as emphasised above. What factors do the firms emphasise? Table II reports our findings.

**Table II. Factors Perceived as Most Important for Profitability**

Alpha	Beta	Delta	Gamma
-Quality (heavily influenced by transportation)	-Cost-effective production	-Cost-effective production	-Customer debt
-Control of raw material	-Control of raw material		
-Capital	-Quality		
-Direct contact with customers	-Image		

Inspection of Table II shows that the four firms, all operating in the same industry, emphasise partly different factors. For example, Alpha emphasises quality and control of raw material (as does Beta). But Alfa’s manager is the only one to emphasise direct contact with customers. Both Beta and Delta emphasise cost-effective production, which is easy to understand as they are price-takers and low cost is a prerequisite for survival and prosperity. The reported factors relate to the managers’ “reality constructions” (cf. Berger and Luckmann, 1967) and reflect experiences (e.g. customers who do not pay, see Gamma), expectations and attributions. It is also evident that the perceived “success factors” are influenced by the industrial and competitive context in which the firms are embedded.

## Discussion

The purpose of this paper is to provide insights into the important, but so far poorly understood, question of how theoretical constructs can be understood and used by managers.

The reported findings indicate that managers are exposed to, attend and learn new concepts. Our findings show that the managers' understanding of the exemplar concept of market orientation is related to their market and competitive context, i.e. their perceived context. The findings also indicate that the managers studied relate market orientation to their firms' performance as well as factors influencing profitability. This indicates that their adoption and interpretation of the market orientation construct relate to their striving for improved, goal-directed behaviours. As such, the concept of market orientation functions as a "thinking tool" which helps them to sort and interpret new stimuli, as discussed at the outset.

It was also found that, even when embedded in the same industry and competitive environment, managers vary in their understanding of the market orientation concept. Their understanding of the concept partly deviates from the meaning reflected in the academic literature. This indicates that the managers studied here have only partly adopted the intended meaning of the theoretical construct. Why is this so? One explanation might be that these four managers are not acquainted with the marketing literature and are therefore restricted in their ability to adopt the concept. Inspection of their educational backgrounds (see Table I) gives little support for this explanation. As we see from Table I, all of the managers have some academic business education. In line with the above theoretical discussion, we believe that the managers we interviewed have created their *own* understandings of market orientation, adapted to the context in which they are embedded, in order to improve their goal-directed behaviours. They are influenced, however, by factors such as contextual experiences and expectations. This may explain why managers' personal constructs of market orientation vary, and why they deviate from the academic meanings (definitions).

In the above discussion, we have demonstrated that personally acquired concepts can be influenced by the immediate social context of the subject. This corresponds well with findings regarding the development of managerial competencies (knowledge). For example, Gilmore (1997) showed that managers' marketing competencies in a large ferry company changed as a result of both competitive pressures to become more customer-focused and new organisational arrangements to facilitate greater responsibility on the part of the managers.

Ottesen and Grønhaug (2001) provide another example of how concepts can be influenced by the immediate context. They find that an important dimension of the market

orientation construct as perceived by managers in the fishing industry is the supply situation. In this context, this makes perfect sense because in order to satisfy customers and earn profits, firms must be able to secure adequate and timely supplies of raw materials (i.e. fish). Because supply is volatile and uncertain, the supply situation is continuously watched and taken into account. In the theoretical construct of market orientation developed by Kohli and Jaworski (1990) and others, this is not the case. In their development of the construct, besides inspecting the literature, they also conducted empirical studies in an empirical setting, which can be characterised in terms of “big business, mass consumer sovereignty, excess supply over demand and ever-increasing ‘consumption’” (Brownlie and Saren, 1992, p.38). In such a situation, supply is almost “unproblematic” (i.e. there is no problem in securing supplies, even though organisation and management of supply is of importance for firms’ profitability, as reflected in the extant literature on purchasing and logistics). This indicates that the development of theoretical constructs can also be influenced by the context in which they are developed (cf. Rosch *et al.*, 1976), and that such contextual influences may impact on the generalisability of theoretical constructs.

The reported study was conducted among small and medium sized firms (SMEs). Our findings indicate that SMEs operate somewhat differently than the larger firms typically studied in the market orientation literature. Thus, there is a possibility that the literature on market orientation is “large firm biased”, and that SMEs adapt ideas and theories from this literature “to make it relevant to the way they do business” (Carson and Gilmore, 2000, p.3).

## **Conclusion**

This paper is an initial attempt to examine how managers make sense of new theoretical concepts. Our findings show that managers adopting a new theoretical concept do so by *adjusting* it to the context in which they are embedded, as emphasised at the outset. Future studies on managers’ understanding and use of theoretical concepts should include other concepts as well as managers from other types of firms and industries. Systematic variations in the backgrounds of managers, their firms and industries would allow for examining how such factors may influence the adoption and understanding of theoretical concepts.

Another avenue for future research is the investigation of processes of diffusion of new concepts. Interesting questions are, for instance: “Why do managers adopt some concepts while ignoring others?” and “From where do managers acquire new concepts?” Social information processing theory may provide a relevant starting point for pursuing such

questions, since the views of others are especially likely to be influential in the ambiguous settings typically encountered by top managers (see e.g. Sutcliffe and Huber, 1998).

Our findings have practical implications as well. It follows from our study that managers embedded in changing environments need to update their theories and inherent concepts to cope and perform adequately. In changing environments, this implies a willingness to question established “truths” and beliefs (see e.g. Day and Nedungadi, 1994; Senge, 1992; Stata, 1989). This, however, is challenging because knowledge structures tend to be rather rigid over time (Sanford, 1987). Argyris’s fascinating *Harvard Business Review* article, “Teaching smart people how to learn” demonstrates this point (Argyris, 1991). In his article, Argyris shows that well educated and committed professionals with key leadership positions, i.e. those organisation-members assumed to be the best learners, did not learn at all. According to Argyris, these individuals are unable to “break out” of their rigid knowledge structures, formed by long training and prior success. And, when they fail, they look outward to “put the blame on anyone and everyone but themselves” (p.6). What they really need is to reflect critically on their own thinking and behaviour, and thus learn to cope with new situations that deviate from the past.

An interesting issue underlying the present work is the inherent “tension” between theory and practice. To allow wide applications, theoretical constructs and the theories they are a part of should be sufficiently abstract. At the same time, however, constructs and theories are often criticised for being too general. For example, as noted by Jaworski and Kohli (1996), the market orientation literature has been criticised for not providing practical advice on how to implement the market orientation concept. Our findings indicate that managers themselves can sort out the issue of “how to” when they are motivated to do so. Successful application of general theoretical constructs require attention and motivated efforts by practitioners in addition to goal-directed and competent dissemination activities by the academic community.

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III



# **Paper II: Market Orientation and Uncertain Supply<sup>\*</sup> in Upstream Markets: An Exploratory Study**

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# **Market Orientation and Uncertain Supply in Upstream Markets: An Exploratory Study**

Geir Grundvåg Ottesen  
and  
Kjell Grønhaug

## **Abstract**

A key task of the purchasing function is to secure adequate and timely supply of needed input factors. In some industries, however, this task is challenging, as it may be difficult to obtain timely and reliable input, e.g. in industries based on natural resources. This may have serious implications for firms' ability to compete effectively in its output markets. Few empirical studies of purchasing behaviour have focused on how actors cope with uncertain supply. And, the fast-growing market orientation literature generally seems to have neglected the importance of supply. This paper aim to gain insight into the poorly understood question of how upstream actors cope with uncertain input supply to handle customers' needs and wants. To investigate our research problem an exploratory study was conducted among 20 upstream actors in the seafood industry. A quasi-experimental approach was applied by selecting firms from two industry branches so that one group was exposed to the "treatment" (i.e. uncertain supply) while the other group was not. Our findings show that when supply is uncertain it is of utmost concern and considered a key determinant in satisfying the firms' target markets.

*Key words:* Market orientation, supply uncertainty, coping strategies

## **Introduction**

This paper focuses on how firms confronted with uncertain supply think and act to satisfy their customers. This is a relevant concern for several reasons. In competitive markets firms need to be market oriented, i.e. understand and satisfy their customers, in order to survive and prosper (Day, 1994; Kohli and Jaworski, 1990). In some industries, the supply of raw product can be particularly volatile and difficult to predict and control. This may affect firms' ability to satisfy customers and thus to compete effectively in their output markets. A relevant

example is the whitefish industry, which is based on wild-caught fish. Here, factors such as fish stock variations, changes in fishing effort, and government regulation contribute to uncertain supply of raw product both in terms of raw product quality and availability (see, e.g., Goulding, 1985; Prochaska, 1984; Young, 1987). In particular are actors close to extraction/harvest exposed to uncertain supply as actors further downstream the supply chain has more buffering options.

Little empirical research has investigated how upstream actors close to extraction/harvest cope with uncertain supply to compete effectively in their output markets. The literature on purchasing and logistics have only to a very modest degree looked at the special case of supply uncertainty as described above. It should also be noted that the crucial role of input supply seems to have been almost completely neglected in the fast-growing literature on market orientation. There may be several reasons for this lack of attention in the market orientation literature. For example, past research have primarily been conducted in industries and organisations where adequate and timely supply is “unproblematic”. For example, in large engineering-based manufacturing firms, purchasing departments may secure adequate supplies by means of reliable delivery contracts and storage of necessary input factors. Marketing managers thus tend to perceive supply as less problematic, not attracting their attention.

The main research question underlying this research is: “How do upstream actors (managers) exposed to uncertain supply understand and adjust to their target customers?” This is a highly relevant question because if the firm is unable to attract and satisfying a sufficient number of customers, the firm will be driven out of business. The concern for the firms’ target markets is particularly emphasised in the extensive and fast-growing literature on market orientation.

The remainder of this paper is organised as follows: In the next section, we first address the concept of market orientation and how it was developed. This section also includes a discussion of how the research context in which the construct of market orientation was originally developed may have influenced its present focus. In the third section, we draw on the marketing and purchasing literatures to address the link between market orientation and supply. In the fourth section we proceed to address how concepts are understood and used, including how concepts become elements of managers’ thinking, influencing their attention, world view and behaviour. We then present the methodology of an exploratory study aimed at capturing perception and practice of market orientation across two branches of the seafood industry. By comparing a group of managers exposed to uncertain supply (the whitefish

branch) with a group of managers facing a relatively stable supply situation (the salmon-farming branch), we are able to assess how uncertain supply influences market-oriented thinking and behaviour. We then present our findings. Finally, the findings are discussed and theoretical as well as practical implications are highlighted.

### **Market orientation**

The market orientation construct is frequently attributed to the influential contributions by Kohli and Jaworski (1990) and Narver and Slater (1990). A key premise underlying the market orientation constructs is that, in order to perform well, organisations need relevant and timely information about the market, i.e. their customers and competitors. Because opportunities and threats continuously change, e.g. due to competitors' moves, the emergence of new technology, or shifts in customers' preferences and behaviours, the market must continuously be surveyed. The continuous stream of market data must not only be collected; this must also be interpreted to become information, distributed among organisation members and be adequately utilised and exploited to stay competitive.

Both Kohli and Jaworski (1990) and Narver and Slater (1990) set out to delineate the domain of the market orientation construct. In this process, they drew heavily on previous marketing literature. It should be noted that this literature is to a large extent based on research conducted in the U.S., and can be regarded a reflection of the empirical realities facing American manufacturing firms in the second half of the last century. Webster (1988) in his review of the development of the marketing concept concluded that:

“As the American economy matured into a consumer society in the 1950s, and as post-war conditions of scarcity were replaced by an abundance of manufacturers and brands scrambling for the patronage of an increasingly affluent consumer, the marketing concept evolved. Volume, price, and promotional orientations were seen to be less profitable than an orientation that focused on the needs of particular sets of customers.” (p.31)

In other words, the marketing concept is rooted in an era of “big business, mass consumer sovereignty, excess supply over demand and ever-increasing ‘consumption’” (Brownlie and Saren, 1992, p.38).

In their research Kohli and Jaworski (1990) adopted a discovery-oriented approach in order to facilitate “elicitation of constructs and propositions” (p.2). In doing so, they

conducted in-depth interviews with 62 managers in 47 organisations<sup>1</sup> in four U.S. cities. Kohli and Jaworski (1990) provide no further information on the managers and their firms or on the environmental conditions faced by these firms (e.g. competitive intensity, buyer power, supply uncertainty, etc.). Furthermore, two managers and 10 business academicians at two large U.S. universities were interviewed. From this mass of observations, Kohli and Jaworski created the abstract construct of “market orientation”. In a subsequent study they provide an operational definition of market orientation through further development and testing using a sample drawn from the Dun & Bradstreet list of the top 1000 U.S. firms (Kohli, Jaworski and Kumar, 1993).

Narver and Slater (1990), in their effort to specify the domain of the market orientation construct, also drew exclusively on the marketing literature. Their conceptual definition of market orientation were operationalised and its reliability and validity tested on a sample of 371 top management team members in 113 strategic business units of one major western corporation.

The attempts to delineate the domain of market orientation as described above can be conceived of as a move from the world of “objects” (e.g. activities and practices) and language (terms) to the world of thought (concepts) (for an excellent discussion, see Zaltman, Pinson and Angelmar, 1973). Later research on market orientation has drawn heavily on the contributions of Kohli and Jaworski (1990) and Narver and Slater (1990). Further research on market orientation has been conducted in numerous research settings, e.g. among service organisations (e.g. Egeren and O'Connor, 1998), across different national cultures (e.g. Selnes, Jaworski and Kohli, 1996) and in transition economies (e.g. Appiah-Adu, 1998). It should be noted that much of the empirical research on market orientation has been conducted among large-scale manufacturing (and other types of) firms heavily dependent on their markets – and thus on their marketing thinking, skills and activities.

It is evident that the theoretical underpinnings and the research context in empirical studies on market orientation has greatly influenced the intention of this concept, i.e. “those aspects of the object[s] that are comprehended in the concept[s]” (Zaltman *et al.*, 1973, p.23). In other words, the strong focus on customers and competitors and information gathering can probably be regarded as a reflection of the empirical context.

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<sup>1</sup> These organisations included 18 firms marketing consumer products, 26 firms marketing industrial products, and 18 that marketed services. 33 of the informants held marketing positions, 15 held non-marketing positions, and 14 held senior management positions.



## **The Market Orientation Construct and the Link between Input and Output**

In employing the open-systems metaphor (Katz and Kahn, 1978), implying that the organisation is dependent on its surrounding environment (cf. Pfeffer and Salancik, 1978), it is easy to understand that organisations need various inputs to create an output that can meet the competition in the market place. This certainly has been addressed in the vast literature on purchasing and logistics. A relevant example here is the emphasis on strategic purchasing (see, e.g., Ellram and Carr, 1994; Spekman, Salmond and Kamauff, 1994; White and Hanmer-Lloyd, 1999). For example, White and Hanmer-Lloyd (1999) argue that a firm's competitiveness in the output market is increasingly dependent on its ability to differentiate itself in its input market. To do so the firm must "...vigorously utilise, the opportunities that the input market represents" in order to obtain exclusive access to externally sourced competencies (White and Hanmer-Lloyd, 1999, p.30).

The reasons why the supply (input) side is not explicitly included in the market orientation construct may be many. One explanation relates to the choice of research context in past research, as indicated above. For example, in such large-scale manufacturing firms, characterised by functional and departmental specialisation, purchasing is handled by a separate department, and is thus not the problem of marketers. Consequently, the link between supply and output may have become less "visible" to managers and others (e.g. marketing researchers) preoccupied with marketing thinking and activities. It should also be noted that in small and medium sized organisations, the degree of specialisation is less profound than in the prototypical organisations surveyed in past research on market orientation, and thus the importance of supply may become more "visible".

## **Managers' Understanding and Use of Concepts**

Senior managers and their companies are embedded in industries with specific buyers, competitors and requirements. To behave purposefully and perform, managers need detailed knowledge of their actual context as well as knowledge about how to behave given certain situations. This corresponds to the concepts of "declarative" and "procedural" knowledge, respectively (see, Anderson, 1983). Managers (like other individuals) try to perform well, i.e. they try to exhibit purposeful behaviours. They are, however, restricted by the limits of their cognitive capacity, i.e. the capacity to notice, interpret, store and make sense of information (data). Constrained by cognitive limitations, managers try to understand the environment in

which they are embedded and decide how to act in order to perform well. Over time, they develop knowledge structures – or mental models that are more or less suited for their actual domain (cf. Johnson-Laird, 1983). Concepts are key elements in managers’ knowledge structures and mental models.

Managers are frequently exposed to new concepts, e.g. through speeches by management “gurus” (see e.g., Abrahamson, 1996; Huczynski, 1993). For managers when first confronted with a new concept, it is a “label”. To become meaningful the new concept must be reflected upon and given content. This may take considerable time and effort as the concept must be “filled” with content, i.e. the adopter of the concept must learn what aspects/phenomena in her or his context to subsume under that label (Rosch 1978). When concepts are understood and developed they become more fine-grained, including hierarchical relations between subcategories of the broader concept (Huff, 1990). In this way, a “label” (e.g. market orientation) can be transformed into a meaningful “thinking tool” (Zaltman, LeMasters and Heffring, 1982) influencing managers thinking and subsequently their behaviour. The understanding and use of concepts is individual and may vary between managers, even when embedded in the same industry and employed in the same organisation.

As noted above, this research addresses the question: “How do upstream actors (managers) exposed to uncertain supply understand and adjust to their target customers?” To gain insight into this question, information about how managers think is needed.

## **Research Methodology**

This section reports the research methodology of our study. The present study is partly exploratory, mainly because present insights do not allow for advancing well-argued, explicit hypotheses/assumed relations. To explore our research questions, a quasi-experimental approach was applied by including firms operating in upstream markets in two branches of the seafood industry (cf. Cook and Campbell, 1979). One group is exposed to uncertain supply (“treatment”) whereas the other group is not, i.e.:

- *Group 1:* Includes 10 firms from the whitefish branch. Here, supply of raw product (wild-caught fish) is purchased from fishing vessels. The source of supply is extremely uncertain both in terms of volume availability and raw product quality (Prochaska, 1984).

- *Group 2:* Includes 10 firms from the salmon-farming branch. These firms either produce the raw product (salmon) themselves (i.e. by farming), and/or they purchase the raw product they need from salmon farmers. The raw product is produced under controllable conditions reducing uncertainty regarding volume availability and raw product quality to a minimum.

The salmon farming branch consists of multiple actors involved in activities such as farming, processing and export. Processing efforts range from products with relatively low value added such as whole gutted fresh salmon, to consumer products with high value added, e.g., smoked and sliced salmon. However, the bulk of products are semi-processed and sold for further processing downstream the supply chain.

The whitefish branch consists mainly of firms involved in various types of primary processing close to harvesting, e.g. filleting and freezing, salting, and drying. As with the salmon-farming branch, the bulk of products is semi-processed and sold downstream the supply chain for further processing. The firms purchase their raw products from a range of different types of fishing vessels ranging from large ocean trawlers to small coastal vessels that provide different whitefish species (e.g. cod, haddock and saithe) of different qualities (which often depends on the type of fishing gear employed). Appendix 1 and 2 report summary information about the firms in the two branches and information about the individual firms and managers respectively. To learn about the two branches, the firms, and their activities and performance, we made use of multiple data sources. For example, printed information and access to accounting data from Dun & Bradstreet allowed us to trace the turnover and profitability for the firms included over a number of years.

In order to reduce the impact of other factors we included firms facing relatively similar industrial conditions, i.e. intense competition in global business-to-business markets, and offering their products (seafood) to similar types of industrial customers.

In this study, we focus on top managers. There are several reasons for this choice. First, in these relatively small firms the senior manager plays a key role, has everything at his/her fingertips and knows what is going on. In addition, the firm's performance is believed to be heavily dependent on the senior manager. In such firms, senior managers are often (co-) owners. In sum, senior managers in such firms have strong incentives to perform.

The managing directors in the selected firms were identified, and appointments made in advance. In two instances the marketing director were interviewed (firm no. 5 and 10, see Appendix 2). Lengthy, semi-structured interviews were conducted. General, broad questions

formed the starting points for discussions with the managers, e.g.: “What do you understand by being “market-oriented”?” and “What does a market-oriented firm do?” It was assumed that when confronted with a well-known concept or label (e.g. market orientation), managers would focus on and recall aspects central to their understanding of that concept. Since, market orientation represents a specific way of thinking it was believed that the managers would hold ideas about factors influencing firms’ market orientation as well as consequences of being/becoming market-oriented. This imply that “market orientation” would have some kind of mental representation that could be captured (Huff, 1990). We asked for and tried to prompt the subjects’ own interpretations of market orientation. The interviews were conducted very much like informal conversations, with emphasis on letting the interview-subjects playing the active role and the interviewer following up with probing questions to get deeper understanding.

Sixteen of the twenty interviews were tape-recorded and transcribed. Four managers resisted the use of a tape-recorder. In these cases, detailed notes taken during the interviews were transcribed immediately after the interview. The transcribed interviews were content analysed and within- and cross-case analyses were conducted in accordance with the recommendations in the literature (Miles and Huberman, 1994; Yin, 1989). More specifically, we carefully inspected the interviews, identifying and comparing the use of words (categories) in order to understand how subjects had assigned meaning to the concept of market orientation. This procedure provided an account of the central elements or subcategories of managers’ mental models of market orientation. Furthermore, it allowed us to explore underlying issues, e.g. why certain subcategories of the market orientation construct emerged. A cross-case analysis involved a count of the number of subcategories, allowing a comparison between perceptions of market orientation across the two industry branches. To allow the reader to assess our interpretations and conclusions, we report excerpts from the interviews (Kirk and Miller, 1986).

### **Managers Understanding of Market Orientation**

In this section, we report the findings of our investigations regarding managers’ perceptions of market orientation. We first report how managers understand the concept of market orientation, and the extent to which they relate market orientation to company performance.

Then we present details about various dimensions (or subcategories) of the construct identified.

### *Market Orientation*

The managers interviewed had few problems in discussing the meaning of market orientation. This indicates that the managers have thought about and developed some understanding about the concept. To the managers interviewed an important element of market orientation was to know “what is going on” or, as it was expressed by one of the subjects: “One orients oneself by collecting information”. This focus on “knowing what is going on” corresponds to the emphasis on information gathering in the market orientation construct.

The way the subjects gather information differs from how informational activities are reflected in many of the items in scales like MKTOR (Narver and Slater, 1990) and MARKOR (Kohli et al., 1993). For example, information gathering was found to take place in a very informal way, e.g. by using the “jungle telegraph”, as one of the managers put it. This indicates that, although they intensively survey, gather and utilise information about their market(s), they would score low on the above-mentioned scales.

We also observed that the managers associated the term “market orientation” positively, and that they, directly or indirectly, assumed market orientation to be important for their firm’s performance, as reflected in the following quotes (numbers refer to firm number listed in Appendix 2):

“Since our firm has survived for 25 years I guess we must have been market-oriented.”  
(Firm No.4)

“All firms struggle to survive. And a market oriented firm will survive by behaving in a particular way.” (Firm No.5)

An implicit assumption underlying these quotes is, we believe, that the industry is a turbulent one and thus that organisational survival is the best indicator of performance. Other managers are more indirect in the way they ascribe benefits to market orientation. For example:

“By being market oriented you achieve better knowledge and control over what you are doing.” (Firm No.2)

The answer to our probe "In what way?" revealed the following:

"It [market orientation] is a way of organising – for us this has meant greater flexibility and more available options."

The only manager who saw a possible risk or drawback in being market-oriented stated that:

"In the short term it may be expensive [to be market-oriented]. This is because you always have to be early in making investments in new production lines and equipment to be in a position to deliver the type of products that one hopes that the market will want in the future." (Firm No.9)

The above observations show that the managers, in their thinking, attribute market orientation directly as well as indirectly to company performance. This indicates that market orientation is an element of their mental models of what influences their firms' performance.

As expected, several subcategories associated with the concept of market orientation were identified. In addition to the relatively clear subcategories of "customers", "competitors" and "supply", we also identified a fourth category, which we labelled "macro-market". The subcategories are elaborated below.

In order to reveal differences in understanding of market orientation between actors from the two industry branches we performed a cross-case analysis by counting and cross tabulating the frequency of subcategories against the two industry branches. This is shown in Table 1, which provides a count of the four identified subcategories across managers in the two branches. In Table 1, an "x" serves to identify the subcategories that each manager associated with the label "market orientation".

**Table 1. Managers' Categories Associated with Market Orientation**

Firm No. (sector)	Customers	Macro market	Supply	Competition	No. of categories
1 (Whitefish)	x	x	x	-	3
2 (Whitefish)	x	x	x	x	4
3 (Whitefish)	x	x	x	-	3
4 (Whitefish)	x	x	x	-	3
5 (Whitefish)	x	x	x	x	4
6 (Whitefish)	x	x	x	-	3
7 (Whitefish)	x	-	-	-	1
8 (Whitefish)	x	x	x	-	3
9 (Whitefish)	x	x	x	x	4
10 (Whitefish)	x	x	x	-	3
Number of categories	10	9	9	3	Average = 3,1
11 (Salmon)	x	x	-	-	2
12 (Salmon)	x	-	-	x	2
13 (Salmon)	x	x	x	-	3
14 (Salmon)	x	x	-	-	2
15 (Salmon)	x	x	x	x	4
16 (Salmon)	-	x	-	-	1
17 (Salmon)	x	-	-	x	2
18 (Salmon)	x	-	x	-	2
19 (Salmon)	x	x	-	-	2
20 (Salmon)	x	-	-	-	1
Number of categories	9	6	3	3	Average = 2,1
	19/20 (95%)	15/20 (75%)	12/20 (60%)	6/20 (30%)	

Inspection of Table 1 reveals that “customers” are the most frequently mentioned subcategory in both branches of the industry. If we inspect the mentioning of the various subcategories, we see that “supply” is higher for whitefish than farmed salmon (9 out of 10, and 3 out of 10, respectively,  $p < .05^2$ ). The finding is interesting, and supports the underlying assumption that significant or salient conditions attract attention.

We also observe that the average number of categories mentioned is higher in the whitefish group than in the salmon group (2.1 versus 3.1, respectively,  $p < .03$ ) and that what was subsumed under the market orientation construct was broader than customers and competitors. An interesting observation is that “competitors”, for several of the managers, are *not* included in their understanding of “market orientation” (why this may be the case is discussed below). When we inspect managers’ focus in their interpretation of market

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<sup>2</sup> Binominal test, two-sided.

orientation, we observe that it differs across managers also within the same industry branch. For example managers No. 2, 5 and 9 focus on all the listed sectors, while manager 7 only includes customers.

### *Customers*

“Customers” were the category most commonly associated with market orientation. The question of how the subjects define (understand) market orientation triggered responses such as:

“To be market oriented we must be in direct contact with the customer.” (Firm No.1)

“Ask oneself questions such as: What value can I give to my customer? How can I make my customers life easier? And then you have to ask yourself: Who is the right customer for me? That is perhaps even more important.” (Firm No.12)

“It is being concerned about the customer, and being able to satisfy the customer’s needs and expectations.” (Firm No.14)

These quotes, and the fact that 19 out of 20 managers associated customers with market orientation, indicate that customers are a central element in managers’ understanding of market orientation in both industry branches. This corresponds well with the marketing literature. As shown in Appendix 2, the firms included have relatively few customers, and thus each customer is important and must be attended to.

### *Macro market*

“Macro market” was the second most important category associated with market orientation. 15 out of 20 managers “brought up” issues that could be subsumed under this label. The following quotes serve to explain what this subcategory includes:

Q: What kind of information is important for the market oriented firm?

“Everything from total market figures and development within the different product areas and distribution channels to the eating habits of consumers. It’s loads of information one has to put together.” (Firm No.11)



This quote may be interpreted as follows: This manager is exposed to “loads of information”. The information is diverse. We also see that “total market figures” are emphasised, indicating the belief that market forces “drive” opportunities. The following three quotes underscore the importance placed on understanding the “total market”, or “macro market” to use our label.

“Market information is important. Prognoses of demand both in terms of total demand and seasonal fluctuation in the market. (...) Another thing is price elasticity, which could facilitate a more optimal pricing strategy. However since it [salmon] has developed into a commodity there is little each actor can do when it comes to pricing. But in a more long-term view we should have more information about the relationship between supply and demand, and price and volume.” (Firm No.15)

“That’s information about prices, whether the market is on its way up or down, that’s like the Alpha and Omega. It has to do with profitability.” (Firm No.8)

“Information about prices is what’s important.” (Firm No.2)

Inspection of these quotes reveals that these managers are concerned about the market price, and conditions affecting that price. This is perhaps no surprise, since market price is of key importance for company performance. However, it is somewhat surprising that “macro market” issues such as market price and supply and demand are associated with market orientation. Our observation is, we believe, a reflection of the fact that most firms in the two industry branches sell commodity-like products in a highly competitive market. However, even in such markets specific segments may exist. This means that prices may differ across buyer groups and users, which gives rise to “strategic windows” (cf. Abell, 1978). The optimal use of strategic windows is likely to depend on the ability to understand and anticipate why and when such windows emerge.

### *Supply*

Twelve out of the twenty managers associated “supply” with market orientation. It should be noted that nine of these managers represent the whitefish branch. The following quotes serve as examples to indicate what is subsumed under this category:

“First of all we have a market in two ways. If it had been so easy that we got as much raw materials as we wished every week, then it would have been easy to define our market. But here it goes in “waves”, Our Lord gives us poor weather in the best fishing season [which prevents boats going out fishing] so market orientation is for us many-sided. (...) It is hard to come up with a definition of market orientation, but for us flexibility is the key word. (...) My job is, every day, to find out how to manage people, fish and products as well as I can. One day it is best to pack the fish fresh and the next day it is better to produce salted fish. (...) so in a way market orientation is about adjusting to Our Lord.” (Firm No.4)

The supply situation this manager faces is a highly volatile one. He gets his supply from small fishing vessels only. Such small vessels are prevented from fishing when the weather conditions are poor, which is often the case during the winter season (which happens to be the best fishing season). Another characteristic of the small fishing vessels is that they employ a range of different types of fishing equipment (e.g. fishing nets, longlines, etc.), which in turn influences the quality of the catch delivered. For example, fish caught by net has been dead for hours when it is taken on board the vessel, whereas other catch methods bring the fish on board while it is still alive. Since bio-deterioration is an irreversible process, the subsequent processing is partly determined by the quality of the fish delivered to the processing plant. Another manager shares this concern:

“A market-oriented firm runs its production according to what the market wants. But it also depends on the raw material. Now we produce small saithe, which has not been bled. This [poor quality] raw material strongly limits what we can produce. For example, it cannot be sold in the fresh fish market.” (Firm No.1)

The saithe has been landed by a very cost-efficient type of fishing, i.e., purse seine. This is so primarily because this particular fish swims in large schools, and thus it is possible to catch large amounts of fish at a low cost. This method, however, results in poor quality fish. After being processed (usually salted), the fish is exported as one of the lowest-priced items in the Norwegian export of whitefish products.

From the above observations it seems that firms in the whitefish branch face two types of uncertainty with regard to their supplies, both of which influence their ability to serve customers, i.e. variations in availability and quality.

In the salmon branch, firms have better control over their supplies. Salmon is kept in cages and its growth and quality (i.e. fat content, flesh colour, etc.) is manipulated by feeding regimes. We therefore did not expect managers in the salmon branch to relate supply issues to

market orientation. However, three managers in this branch did in fact make this association, as shown in the following quotes.

“One of our sellers tells us that it is the customers who decide what we should produce.”

The probe “*do you do so?*” triggered this answer:

“No!” (Firm No.13)

Then the manager explains various conditions, e.g. how temperature influences the growth-rate of salmon, which makes it difficult to comply with customers demands (e.g. for all-year delivery schedules). Another manager in the salmon branch shares the same concern, as shown in the following quote.

“Per definition it means that market related conditions should direct decisions along the value chain.” (Firm No.15)

*Q: Is that possible within salmon farming?*

No, because the market is one criterion and you have to consider other factors too. In salmon farming, or with fish, you have to adapt to natural conditions. (...) We have to start at both ends, we have to start with the raw material, and we have to start with the market (...) You have to undertake a mutual adjustment of these two factors, and that is market orientation. You can say that in salmon farming there are better prospects for planning than in the traditional fishing industry.” (Firm No.15)

It appears that availability of supplies can be a problem in the salmon branch, at least in terms of being able to deliver all-year round. As the following quote shows, quality variations are also a concern:

“It means delivering the product the customer wants at the time and in the way the customer wants to have it delivered.” (Firm No.18)

*Q: Is that possible within salmon farming?*

Yes, it is possible, but it is impossible to guarantee that we shall deliver a salmon, which is 4 kilos with 16% fat content and a particular flesh colour. Here the biology plays a role, but within certain limitations, it is possible. But the customer has to know that biology gives a certain spread.” (Firm No.18)

Salmon quality variations may, however, be handled by sorting and grading and thus such uncertainty can be strongly reduced. This may explain why seven out of 10 managers in the salmon branch do not associate supply issues with market orientation. The following quotes were typical of managers who did not associate supply with market orientation:

“We are a pure manufacturing company like any other food industry.” (Firm No.11)

“(…) to illustrate the difference between the salmon sector and the whitefish sector I would call it [salmon farming] industrial farming.” (Firm No.14)

Why should managers include supply in their interpretation of market orientation? We believe the answer is relatively simple. The close connection between output and input means that market-place behaviour is strongly determined by the character of the input (cf. Katz and Kahn, 1978). Consequently, in order to serve their markets (better than their competitors) uncertain supply must be dealt with. In the words of one of the managers in the whitefish branch:

“If you don’t know what you will get in, you sure don’t know what you’ll get out.” (Firm No.8)

When supply uncertainty is high, as is the case here, the relationship between output and input is highlighted. And, in order to exhibit purposeful behaviours in the market, the firm (manager) must try to the best of their ability to understand fluctuations in supply, and importantly, how to deal with it. Hence, over time and with experience (trial and error) the importance of the supply sector is reinforced. Therefore information about this sector will “stand out” - it becomes salient.

### *Competitors*

Only six out of twenty managers associated competitor issues with market orientation. Compared to the emphasis on competitors and competition in the marketing literature, this finding is surprising. It should also be noted that the subjects hardly talk at all about competitors at the micro level, i.e. firm x or y. Rather, when competitors are discussed it is at the aggregate level, usually in terms of competition from other nations, or substitutes (e.g. chicken), for instance:

“Competition is extreme. On prawns we compete with Iceland [the country]...” (Firm No.10)

“Our competitors are other nations, particularly Iceland. Iceland is often a price leader, so when we come out in the market we are referred to a price given by Icelanders which is often below ours.” (Firm No.9)

“Information about competitors is of course important. Just now we have a strong emphasis on such information since Norway is trying to limit its production, while Chile is going through a powerful expansion.” (Firm No.15)

On the other hand, two managers, one from each industry branch, associate competitors at the micro level with market orientation. The manager of firm No.2 looks at competitors’ products to imitate them, as reflected in the following quote:

“We make copies – that’s what we do. (...) When we started this type of production [value-added frozen whitefish products] we went to the supermarket and bought the products. We also tried to put together a “jigsaw” of information from different ingredient suppliers. They do not tell us directly what they supply to our competitors, but indirectly we can find out some interesting stuff.” (Firm No.2)

This quote demonstrates a focus on competition at the micro level, i.e. between competing products. It should, however, be noted that this relates to a single event in the firm’s history, i.e. when they changed their product mix and needed information on how to manufacture a type of product new to the firm. Hence, the quote does not imply that the firm surveys its competitors on a regular basis. The other manager who associates competitors with market orientation stated:

“We map the needs of our customers and monitor our competitors. If we discover that some [competitors] have lower prices than we do, we have to find out why.” (Firm No.17)

This firm is a trader, buying whole gutted salmon from small farmers and selling it in a highly competitive global market. A single competitor’s price bidding hardly affects the “market”. The interest in competitors’ prices is more likely to be attributed to the possibility that such prices (and price changes) may hide other issues of interest, e.g. a new favourable contract with farmers that makes it possible to sell at a lower price without reducing margins, or some innovations in cost reductions. Thus, other exporters’ price bids provide a signal

which triggers other firms to search for underlying issues, which in turn may reveal new practices that can be imitated.

These observations indicate that firms and their managers are keen to learn from their observations and imitations of competitors, as dealt with in the extensive literature on imitation and mimetic processes (see e.g. Galaskiewicz and Wasserman, 1989; Haveman, 1993). However, our observation that only two out of 20 firms reported competitor issues at the micro level when discussing market orientation departs from the conventional view of market orientation. In general, the managers studied do not seem to have a clear picture of their competitors either in terms of specific firms, or in terms of prototypical competitors (cf. Porac and Thomas, 1990). How can these observations be explained? It appears that since competition is hardly considered at the micro level such issues are perceived as less important to the firms. This can probably be viewed in relation to their relatively strong focus on macro issues. Apparently it is more important for the managers interviewed to understand how different market segments behave in terms of supply and demand variations than it is to understand the behaviour of specific competitors in these markets. Our interpretation is as follows: In the markets where these firms operate there are many sellers, products are rather homogenous, and customer preferences are well known and relatively stable. In this situation the market price is influenced by fluctuations in supply which are primarily caused by variations in seller nations' competitiveness. For example, when the yearly catch quota for Icelandic cod is reduced, the market price in many market segments is likely to be increased and may create an opportunity to obtain a higher price for a relatively short period, i.e. a strategic window appears. The postponement of the catching season for Canadian prawns by a couple of weeks similarly creates an opportunity for Norwegian sellers of prawns to take out a price premium for a short period of time (at the time when supplies of prawns are expected). Hence, we believe that opportunities for making profit are driven by many factors outside the influence of specific competitors. Rather than focusing on specific competitors, the ability to compete effectively is determined by the ability to foresee or anticipate changes in the supply in such industries as those studied here.

## Market Actions

In this section, we explore in more detail how upstream actors cope with supply uncertainty to compete effectively in their output market. Intuitively, unstable and uncertain supplies may cause problems in satisfying the needs and wants of downstream customers, e.g. by limiting the product range of the firm, affecting the quality of the products offered, or by disturbing the ability to deliver on schedule. How do the managers and their firms cope?

In line with Katz and Kahn (1978), we found that firms seek to reduce environmental uncertainty either by trying to control what will happen to their inputs and/or outputs, or by trying to predict and adjust to changes they cannot control. Accordingly, we first discuss strategies aiming to control raw product supply.

### *Controlling uncertain supply*

It was observed that several of the firms studied organise supply hierarchically (Williamson, 1975) as several processing firms in the whitefish branch now own their own fishing vessels. In periods with low quotas and high demand, vertical integration serve to reduce opportunistic seller behaviour and thus secure the supply of raw product by “removing” it from a highly competitive raw materials market (cf. Porter, 1980). However, vertical integration is only partly effective in reducing uncertainty, since most sources of uncertainty cannot not be controlled by organisational arrangements, i.e., the supply is in the hands of “Our Lord” as one of the managers put it. It should also be noted that a disadvantage of vertical integration is that it may come at the expense of flexibility, which seems to be an important success criterion in the whitefish branch. Research has shown that vertically integrated firms in the whitefish branch do *not* achieve superior performance (Isaksen and Dreyer, 2000), a finding which correspond with the empirical literature on vertical integration (see, e.g., Stuckey and White, 1993).

An interesting approach aiming at controlling the input of raw product in the whitefish branch is emerging through recent attempts to farm whitefish species such as cod, halibut and catfish. If successful this “strategy” would compare to the situation in the salmon-farming branch were firms largely, have control over their raw product. However, so far, few commercial attempts can be considered successful. This can likely be attributed to insufficient technology, in particular to manage the juvenile stage of this kind of farming. It should be noted that cod farming seems to get considerable attention every time there is a crisis in terms of sharply reduced fishing quotas, as is the case today. Accordingly, several major actors as

well as governmental bodies are now making large investments in the farming of whitefish species.

### *Adjusting to uncertain supply*

A wide range of strategies aimed at adjusting or adapting to supply uncertainty was identified. For example, it was observed that firms compete in the raw materials markets by offering various services to fishing vessels to make themselves attractive. The development of flexible production was another strategy for coping with uncertain supply that was observed. This finding is in line with previous research which indicate that flexibility is an important predictor of survival and success in this industry (Dreyer, 1998). Development of product mix flexibility can also be conceived as a response to variations in raw material quality (cf. Anderson, 1995), as reflected in the following quote:

“We have four production lines in order to be flexible with regard to the raw material.”  
(Firm No.2)

It should be noted that the various production lines are suited for and demand different types of raw materials.

We also observed that in the whitefish branch, firms build their own buffer zone through stocks of raw materials. They also develop pools of raw materials suppliers (i.e., fishing vessels) who exhibit different patterns of instability. Firms were also found to reduce the possible effects of uncertain input factors on their output by *avoiding* long term contracts with customers (!) and thus remaining flexible and steering clear of promises that might be difficult to fulfil. An additional coping strategy we observed was that of educating customers about the nature of the raw material (i.e. fluctuations) as well as the characteristics of the final product (e.g. the high degree of perishability of fresh seafood products). This is illustrated in the following two quotes:

“We often bring our customers here to learn from them. This also puts them in a position to understand our problems better, for instance, the seasonal variations.”  
(Firm No.10)

“We have to go to the buyers and sell the argument that fisheries are seasonal (...) however, when we come further down the market we often wonder whether those who decide know what this is all about – that it is a natural product we are talking about.”  
(Firm No.9)



A similar strategy was observed in the salmon branch. A firm, which has a large contract with a major Japanese customer (Firm No.18), supports this relationship by means of a Web-based software package developed for exclusive mutual exchange of information. According to the manager, this program is important as an educational device for teaching the customer about the constraints and challenges of dealing with a biological raw material. The software allows the customer to follow the management (e.g. feeding regime) and subsequent development of quality attributes which are measured weekly (e.g. size composition of batch, fat content, flesh colour). In due time, this particular batch of salmon (separate cages) will be sold to this particular customer.

## **Discussion**

The reported study is an initial attempt to understand how uncertain supply influence upstream actors' market orientation, i.e. their understanding of target customer groups and market activities. Our findings show that the understanding of market orientation and how this understanding influences actual behaviour is strongly influenced by the context in which the organisations and their managers are embedded. These findings have both theoretical and practical implications. We start by discussing theoretical implications.

Our findings indicate that managers exposed to uncertain supplies subsume a new dimension (i.e. supply) in their understanding of market orientation. This is somewhat "inconsistent" with the conventional view of market orientation as reflected in the seminal works by Kohli and Jaworski (1990) and Narver and Slater (1990). In the present context it makes, however, perfectly sense.

The reported findings regarding how managers conceptualise competitors and "macro market" issues also deviates from findings reported in previous studies. One way of interpreting these findings is that the managers studied here are less acquainted with the marketing literature compared to their U.S. colleagues who participated in the seminal studies of market orientation and therefore do not have a "correct" understanding of market orientation. However, all the 20 managers we interviewed were familiar with the term "market orientation", and they all had developed their own understanding of market orientation adjusted to their context, as reflected in the underlying theoretical discussion. Hence, an alternative way of looking at the mismatch between our findings and the conventional view is that current conceptualisations of market orientation partly fail to capture the phenomena of market orientation as practised by upstream organisations

(managers) facing uncertain input supply. Our findings also show that the managers studied relate market orientation to their firms' performance, indicating that their understanding of the market orientation construct really has an impact on their behaviour.

Our study has practical implications as well. It seems clear that the managers' understanding of the market orientation construct is reflected in their firms' doing, i.e. the strategies they use to secure the supply of raw product is of high importance for serving their customers effectively. We observed that the actors cope by either trying to control their inputs, or by trying to adjust to changes. Since it is rather difficult (impossible), to control a natural resource it is not surprising that the latter strategy is the most common. Our findings indicate that backward vertical integration has serious limitations when uncertainty is high. The recent attempts to farm whitefish is, however, a strategy where upstream actors seeks to "move" the raw product into controllable conditions, as exemplified by salmon farming.

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### Appendix 1. Summary of Some Firm Characteristics

	Firm age (years)			Turnover 1998 (mill NOK)			ROI 1998 (%)		
	Mean	SD	Range	Mean	SD	Range	Mean	SD	Range
Whitefish (n = 10)	13,90	7,80	2-27	136,05	95,64	31,55- 289,29	14,90	14,12	1,74- 43,95
Salmon* (n = 9)	10,00	6,98	1-26	310,49	240,28	29,83- 811,10	6,73	8,19	-1,87- 25,58
All firms (n = 19)	12,05	7,49	1-27	218,68	195,55	29,83- 811,10	11,03	12,13	-1,87- 43,95

\*Data on one firm (firm No. 20) were unavailable.

## Appendix 2. Some Characteristics of the Firm's and their Senior Managers

Firm No.	Start-up	Sales mill NOK (ROI) 1998	Customer concentration	Educational background/work experience
1	1977	31,6 (6,1%)	3 customers take 90% of sales	6 month at commercial college. Worked at the plant for the last 25 years.
2	1981	66,7 (8,7%)	Approx. 20 regular customers in four product areas.	Engineer. Started in the firm in 1974 and has been managing director since early 1980s.
3	1988	258,2 (10,5%)	"we have many customers but some take large volumes"	University degree (Bachelors') in economics. Worked his way up the firm.
4	1972	36,6 (4,5%)	8-10 customers take 95% of sales	Regional college degree in business administration. Worked 5 years in governmental body (county council administration. Grew up in the community. The last two years as managing director.
5	1986	289,3 (9,6%)	5 customers take 60% of sales	Master of science in seafood marketing. Marketing manager for the last 12 years.
6	1984	135,3 (34,6%)	5 customers take 80% of sales	Fisheries vocational school. Managing director in the firm for the last 28 years.
7	1997	222,7 (44%)	1 customers take 50% of sales. The rest is sold to a range of smaller customers.	Fisheries vocational school. Commercial college. Managing director since start-up in 1997. Several years in senior positions in the mother company.
8	1984	79,8 (22,4%)	Sales goes through mother company	Fisheries vocational school. Managing director for the last 16 years.
9	1997	60,6 (1,7%)	5 customers take 80% of sales.	Master of Science in fisheries. Managing director for the last 12 years.
10	1985	179,9 (7%)	6 customers take 75% of sales.	Master of Science in seafood marketing. Marketing director for the last 13 years.
11	1973	115,4 (9%)	5 customers take 50% of sales.	MBA. 10 years in food industry before 5 years in the salmon farming industry, with the last 2 years as manager.
12	1986	186 (3,2%)	10 customers take 90% of sales.	Engineer. MBA (France). Worked as a shipbroker for 5 years. The last 5 years in the firm, the last 18 month as managing director.
13	1987	173,3 (8,7%)	5 customers take 50% of sales.	Fish farming vocational school. Commercial college. Managing director for 19 years. First in another division of the group, then in the salmon division for the last 13 years.
14	1998	29,8 (-1,8%)	n.a.	MBA. 12 years in a oil company. Managing director in a shipping company for 5 years. The last 6 month in the salmon farming industry.
15	1990	447,3 (-1,9%)	n.a.	n.a.
16	1994	496,1 (25,6%)	n.a.	Worked in the salmon farming industry for the last 9 years.
17	1990	308,4 (4,5%)	5 customers take 60% of sales.	Master of Science in fisheries. Worked in the salmon farming industry for the last 18 years. Has been 5 years with the firm.
18	1992	811,1(4,6%)	n.a.	n.a.
19	1991	227,1 (8,7%)	5 customers take 60% of sales.	Commercial college. In the salmon farming industry for the last 15 years. The last two years in the firm.
20		n.a	n.a.	Worked in the seafood industry for more than 50 years.

III





# **Paper III: Coping Strategies in Highly Turbulent and Competitive Supply Environments<sup>\*</sup>**

Under review for *Scandinavian Journal of Management*

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# **Coping Strategies in Highly Turbulent and Competitive Supply Environments**

Geir Grundvåg Ottesen  
and  
Kjell Grønhaug

## **Abstract**

This paper explores how firms cope to secure vital input factors in a volatile supply context. Based on detailed mapping of firms' thinking and doing a wide range of different coping strategies were identified. It was found that firms differ widely in their application of strategies, which is partly explained by the ambiguous nature of supply uncertainty giving rise to strategies differing in scope, e.g. to alleviate uncertainty regarding the volume of supplies or uncertainty regarding raw material type and quality. Our findings show that the widely applied strategy of backward vertical integration only helps secure a small fraction of actors' total supplies. It thus seems that the concept of vertical integration has been applied without carefully considering its limitations in the present context, where majority ownership in vessels is not allowed, and where supply is impossible to control due to state of nature.

*Key words:* Supply uncertainty, top managers, coping strategies

## **Introduction**

This paper focuses on how firms confronted with uncertain supplies think and act to secure vital input factors to compete effectively in their output markets. This is a relevant concern because in some industries the supply of critical input factors can be particularly volatile and difficult to predict and control. This may cause problems in satisfying the needs and wants of downstream customers, e.g. by limiting the product range of the firm, affecting the quality of the products offered, or disturbing the ability to deliver on schedule. Therefore, uncertain supply may affect firms' ability to compete effectively in their output markets. A relevant example is the fish processing industry based on catches of wild fish. Here, factors such as fish stock variations, changes in fishing effort due to e.g. poor weather conditions, and government regulation contribute to uncertain supplies of raw material, both in terms of quality and availability (see, e.g. Dreyer, 1998; Dreyer & Grønhaug, 2001; Prochaska, 1984;

Young, 1987). In particular, actors close to harvest are more directly exposed to uncertain supply than actors further downstream in the supply chain, e.g. because supply uncertainty will, to some extent, have been absorbed by upstream actors.

Little empirical research has investigated how firms cope with uncertain supply in order to compete effectively in their output markets. The literature on purchasing and logistics has only to a very modest degree looked at the special case of supply uncertainty as described above. It should also be noted that the crucial role of input supply generally seems to have been neglected in the marketing literature. There may be several reasons for this lack of attention. For example, past research in marketing has primarily been conducted in manufacturing firms facing relatively stable supply conditions and/or firms where purchasing departments secure adequate and timely supplies by means of reliable delivery contracts and storage of necessary input factors. Managers and researchers may thus tend to perceive supply as less problematic, so that it does not attract their attention.

The main research question underlying this research is: “How do upstream actors exposed to uncertain supply think and act to secure critical input factors?” This is a highly relevant question because if the firm is unable to attract and satisfy a sufficient number of customers, it will be driven out of business. The remainder of this paper is organised as follows: In the next section, we discuss the concept of environmental uncertainty and address the strategy of backward vertical integration, which seems to be a much focused-on strategy applied by firms facing supply uncertainty. We then present our research, designed to capture how actors in the Norwegian fish processing industry think and act to secure critical inputs. Then we present our findings. Finally, the findings are discussed and implications highlighted.

## **Theory**

Sudden and unpredictable variations in supply of critical and perishable raw materials represent a specific type of environmental uncertainty that must be dealt with in an adequate manner because firms need regular supplies to operate effectively. This follows from the input – throughput – output paradigm, which states that firms’ value creation is brought about by transforming input factors into valuable products and services offered in the output market (cf. Katz & Kahn, 1978). The problem of coping with environmental uncertainty has long been recognised as a key managerial challenge. Thomson (1967), for example, postulated that “uncertainty appears as the fundamental problem for complex organisations” and that

organisations respond to uncertainty in the environment by “buffering their technical core from its effects” (p.119). A firm’s performance depends heavily on adequate utilisation of its capacity, imposing fixed costs. Regular supplies are necessary for adequate capacity utilisation, which corresponds to Thomson’s (1967) buffering of the technical core. This is supported by a number of studies that have demonstrated that perceived environmental uncertainty exerts a considerable influence on organisational structures and processes (Huber & Daft, 1987).

The research literature has recognised that several types of environmental uncertainty exist (see Sutcliffe & Zaheer 1998 and Miller & Shamsie 1999 for recent reviews). Sutcliffe & Zaheer (1998), for example, distinguish between primary uncertainty, competitive uncertainty, and supplier uncertainty. Primary uncertainty relates to “state of nature”, for example, as faced by firms dependent on supplies of wild fish which often show a stochastic pattern (cf. Dreyer, 1998; Dreyer & Grønhaug, 2001; Prochaska, 1984). Supplier uncertainty relates to exchange patterns, i.e. supplier action, for example, opportunistic behaviour (cf. Williamson, 1975), and competitive uncertainty relates to competitors’ actions (cf. Porter, 1980).

Competitive uncertainty, e.g. due to competitors’ actions in markets as studied here, i.e. in highly competitive raw material markets, where sellers and buyers are multiple, the products to a large extent standardised and/or easy to judge, and where information flows rather easily, is not likely. Previous studies have shown that in such markets firms do not consider specific competitors (Ottesen & Grønhaug, 2001). The reasons are that individual competitors do not influence market opportunities, and, due to cognitive constraints and other resource requirements, firms are unable to gather, analyse and handle information about all competitors. Rather, they focus on market trends, created by the aggregated behaviours of the actors. In highly competitive markets firms are – in principle – “price takers”. They react to “market signals”, e.g. increasing prices influencing their expectations.

The actual market situation, with multiple suppliers and buyers, indicates that opportunistic behaviour on the part of suppliers is particularly likely, creating supplier uncertainty. However, as often observed in highly competitive “perfect” markets, all (or many) actors react in the same way to the same signal, which results in more or less expected outcomes, e.g. increased total supply causes low prices, resulting in reduced supply, followed by higher prices and increasing supply. Thus, in highly competitive markets supplier and competitor uncertainty is probably modest. However, although opportunistic behaviours on the part of suppliers or competitors are not expected *per se*, shortages in supply intensify

competitors' efforts to secure necessary supply, and thus intensify the competition for supply. This amplifies the problem of coping with primary uncertainty related to supply.

The research literature has addressed the problem of handling environmental uncertainty. In particular, the strategy of vertical integration has received much attention. The concept of vertical integration is, however, an ambiguous one. Often it is associated with ownership. By owning more than 50 per cent, the owning firm can control, and thus purposefully apply, vertical integration to avoid opportunism and/or overcome market deficiencies. However, in market situations as described here, supplier and competitor uncertainty is modest and as such does not motivate the application of vertical integration. What about primary uncertainty? Can vertical integration help actors cope with this type of environmental uncertainty? By integrating backwards and owning their own sources of supply, in this case fishing vessels, firms can apply "the economics of avoiding the market" (Porter, 1980). In this way, firms can secure a certain amount of raw material, but not necessarily all they need. In this case, firms are "guaranteed" the utilisation of at least some fraction of their processing capacity. However, acquiring and owning vessels is costly. It requires capital and imposes fixed operating costs. Also, when the catch is ample, firms can get their required supplies at prices that hardly cover the costs of owning and operating their own vessels. Also, fishing and processing are two different businesses, and there is no reason why being an expert firm in processing should yield specific advantages in fishing. Whether it is profitable for firms to own their own vessels depends not only on catch volume and price, but also on the associated costs of running the vessel(s).

It should also be noted that in the present context, governmental regulations state that upstream firms (as studied here) are not allowed to have *majority* interests in fishing vessels, also indicating that vertical integration is perceived (by the government) as a formal means of controlling firms' supply. Only a few examples of majority ownership exist.<sup>1</sup> Observations from the Norwegian fish processing industry show, however, that most firms with ownership in vessels hold minority investments only, and that "control over supply" is the major motive (Dreyer, Bendiksen, Iversen & Isaksen, 1998). Not all the processing firms in the seafood industry integrate backwards. It should also be noted that most firms owning vessels only get a small fraction of their necessary supplies from own vessels (Dreyer *et al.*, 1998).

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<sup>1</sup> In the 1950s and 60s, some firms got dispensations from the general rule and were allowed to own fishing vessels, e.g. seagoing trawlers. This was due to political concerns regarding depopulation of small local communities. By allowing firms to own majority interests in vessels, the intention was that processing plants would be able to secure their supplies to "keep the wheels going" and thus avoid lying off workers or shutting down.

These observations give rise to multiple questions, e.g. why do firms obtain minority shares, if the prime purpose is to “secure supply”? And as stated at the outset: How do firms cope, i.e. what are the strategies they apply to secure the necessary supply?

Although most firms in the seafood industry are rather small, they vary in “specialisation”, products offered, and market focus. Some firms concentrate on rather few products, while others offer a broad range of products. Some firms mainly focus on a limited number of customers and geographical markets, while others sell their products to multiple customers in globally dispersed markets. Firms and their managers also vary in economic resources, educational background and experiences. The managers in charge may also vary in their “mental models” (cf. Johnson-Laird, 1983). Managers, like other individuals, hold and develop knowledge structures enabling them to understand their surrounding environment, and act. Such knowledge structures tend to be rather rigid, and are shaped through, and influenced by, their actual context, history, experiences, and educational background (cf. Sanford, 1987). Because managers in different firms are exposed to partly different information environments, and because managers tend to focus on the activities they are involved in (Dearborn & Simon, 1958), they may, over time, develop partly different mental models of how to act, survive and stay competitive (Day & Nedungadi, 1994), i.e., their mentally constructed “road-maps” of what works and how to act. Such mental models are also likely to include beliefs about cause-effect relationships of importance in order to behave rationally, i.e. to exert goal-directed behaviours. Present insights regarding firms’ strategies for coping with uncertain supply and what they consider adequate actions are, however, limited.

## **Research Methodology**

This section reports the research methodology underlying the empirical study to examine the stated research question, i.e., “How do upstream actors exposed to uncertain supply think and act to secure critical input factors?” We first describe the choice of research design, setting and data sources, and proceed to describe how the data were collected and analysed.

### *Research Design and Setting*

Due to modest a priori insights, an exploratory approach was chosen here. This implies a flexible, discovery-oriented approach allowing us to gradually uncover and understand the “problem space”.

The Norwegian seafood industry constitutes the context of our study. The industry consists mainly of firms involved in various types of primary processing close to harvesting, such as filleting and freezing, salting, and drying. The bulk of products are semi-processed and sold downstream the supply chain for further processing. The firms purchase their raw materials from a range of different types of fishing vessels, ranging from large ocean trawlers to small coastal vessels that provide different types of fish (e.g. cod, haddock and saithe) of variable quality (which often depends on the type of fishing gear employed). The supply is extremely uncertain in terms of volume, availability and raw material quality (Dreyer, 1998; Dreyer & Grønhaug, 2001).

### *Data Collection and Analysis*

For the present study, 10 firms in the industry were selected. They varied in product assortments, the activities they were involved in, market scope and profitability in order to secure variability (Campbell, 1975). All the firms were small- and medium-sized, which is the case for the great majority in the industry. The average turnover is 136 million Norwegian kroner (range 32-290). The firms are relatively young, averaging 14 years (range 2-27 years). The relatively modest number of firms included were chosen for the exploratory purpose of the study, i.e. requesting detailed insights into the individual firm and its doing. Secondary printed information, including annual reports, articles in the business press, and access to accounting data from Dun & Bradstreet allowed us to trace the activities, turnover and profitability of the firms included over a number of years. To get fine-grained insights into how the firms think about and cope with uncertain supply, we focused on top managers. The reason for doing so is the crucial role of top managers, in particular in small and medium-sized firms, which dominate in the Norwegian fish processing industry. In such firms, the top manager is the prime decision-maker who has everything at his/her fingertips and knows what is going on. In these firms, top managers are also often owners with strong incentives to perform well. The managers included in the study all had extensive experience of the seafood industry, averaging 16.5 years, with a range from 7 to 25 years.

To “capture” how the managers perceived the supply situation and how to deal with it, we collected primary data. The managing directors in the selected firms were identified and



appointments made in advance. Lengthy, semi-structured interviews were conducted. General, broad questions formed the starting points for modestly structured interviews with the managers, e.g.: “How do you perceive the supply situation?” and “How do you secure the necessary input of raw materials?” Because supply is very important in the seafood industry, it was assumed that the managers would have fine-grained and reflected ideas about the nature of the supply situation and how to secure necessary input factors. We asked for and tried to elicit the subjects’ own interpretations of the supply situation and how it was handled. The interviews were conducted very much as conversations, with emphasis on letting the managers play the active role and the interviewer following up with probing questions to get a deeper understanding. This procedure allowed us to explore underlying issues, such as why certain coping strategies were preferred or had emerged. Eight of the ten interviews were tape-recorded and transcribed. Two managers resisted the use of a tape-recorder. In these cases, detailed notes taken during the interviews were transcribed immediately after the interview. The transcribed interviews were content-analysed by carefully inspecting the interviews to identify different coping strategies and why they were preferred or had emerged. To allow the reader to assess our interpretations and conclusions, we report excerpts from the interviews (Kirk & Miller, 1986).

## **Findings**

In this section, we report the findings regarding how actors close to harvest think and act in order to cope with supply uncertainty. We first report how the managers perceived the supply situation and then report how they cope with this particular type of environmental uncertainty.

### *Perceptions of the Supply Situation*

All the ten managers expressed concerns about the supply situation. For example, one manager stated:

If it had been so easy that we got as much raw material as we wanted every week, then it would have been easy to define our market. But here it goes in “waves”, Our Lord gives us poor weather in the best fishing season [which prevents boats going out fishing]... (...) for us flexibility is the key word. (...) My job is, every day, to find out how to manage people, fish and products as best I can. One day it’s best to pack the fish fresh and the next day it’s better to produce salted fish. (...) so in a way market orientation is about adjusting to Our Lord.

This quote shows that the supply situation this firm faces is a highly volatile one. The same manager also explained the particular difficulties and uncertainties confronted in securing adequate supply, i.e.:

...It is not only the difficulties involved in getting supply, it must also be of the right type [i.e. so that it allows for the most profitable production], and in the right volume, at the right time.

Inspection of this quote shows that this firm has difficulties in getting the volumes it needs, but also indicate that the supplies might not be of the “right” type. An important factor, which seems to amplify supply uncertainty, is the way the fish is caught. For example, several of the firms studied get their supply primarily from small coastal fishing vessels. Such vessels are prevented from fishing when weather conditions are poor, which is often the case during the winter season in this part of the country (Northern Norway), which happens to be the best fishing season. Another characteristic of the small fishing vessels is that they employ a range of different types of fishing equipment (e.g. fishing nets and long-lines), which influences the quality of the catch they deliver, as well as what type of fish (i.e. species) they catch. For example, fish caught by net has usually been dead for hours when it is taken on board the vessel, whereas other catch methods bring the fish on board while it is still alive. The type and quality of the fish delivered to the processing plants seems to restrict the type of output that can be made. The following quote underline this:

If you don't know what you will get in, you sure don't know what you'll get out.

This quote reflects uncertainty regarding what the firm gets in and clearly shows that the firm's output is affected by the input. Another manager was more concrete, i.e.:

A market-oriented firm runs its production according to what the market wants. But it also depends on the raw material. Now we produce small saithe, which has not been bled. This [poor quality] raw material puts strong limits on what we can produce. For example, it cannot be sold in the fresh fish market.

This particular type of fish (saithe) has been landed by purse seine, a very cost-effective type of fishing. This method, however, results in poor quality fish because it is impossible to bleed the fish due to a combination of large volumes and low on-board capacity to handle the fish.

After being processed (usually filleted and salted), the fish is exported as one of the lowest-priced items in the Norwegian export of whitefish products.

Our discussions with the managers showed that the supply situation was perceived as volatile and difficult to predict. For several of the managers, the supply situation strongly influenced their thinking about how to run their businesses. How then do the managers (firms) cope with uncertain supply? We observed that firms try to cope with this particular type of environmental uncertainty, either by trying to: (1) control what will happen to their inputs, (2) adjust to changes they cannot control, or (3) reduce or “buffer” the effects of supply uncertainty in the output market (cf. Katz & Kahn, 1978). We first discuss strategies that aim to control the supply of raw material.

### *Controlling Uncertain Supply*

In the theoretical discussion, we indicated that vertical, backward integration is a way of securing the necessary supply, but also that it might not be particularly relevant here – in a highly competitive market. In spite of this, seven of the ten firms studied here have integrated into the fishing fleet. One of these has majority ownership. Here, the manager reported that the firm gets 50 per cent of its supply from own vessels. The other six firms have minority investments, which only helps securing a small part of their total supply. This observation corresponds with the findings of a recent study of vertical backward integration in the Norwegian fish processing industry. Here it was found that 50 out of 75 firms (67%) had integrated backwards by investing in fishing vessels and that only 4 out of the 50 firms (8%) with ownership got more than 50 per cent of their total supply from their own vessels (Dreyer *et al.*, 1998). Thus, in this context, vertical backward integration does not appear to be particularly effective in terms of securing supply. There may be several reasons for this. One explanation is that firms are not allowed to have majority interests in vessels (although as noted earlier, some exceptions exist). Accordingly, few firms have the necessary control over vessels to decide where they should land their catch. Regardless of this, however, control over vessels only helps secure a certain share of the yearly catch (quota), which often differ considerably from one year to another. In addition, control over vessels do not lead to control over the *source* of this particular type of uncertainty, i.e. unpredictable variations due to biological, oceanographic and climatic conditions.

Why then do firms make investments in vessels? Normally, one might expect such investments to be profit motivated. However, return on such investments is very modest, which makes it almost impossible to attract professional investors. The motive seems to be to

establish and maintain relationships, and thus through “credible commitment” (see e.g. Ghemawat, 2000, pp.121-124) to signal trust and create social ties assumed to be useful to secure supply. This was also supported by the observation that some of the firms gave loans to fishers for new vessel investments. One manager justified loans to vessels in this way: “We want to keep them [the fishing vessels] here”. Thus, for some firms, local supply was considered of utmost importance. Close, social relationships were believed to be beneficial in times when they were confronted with stiff competition for supply, and credible commitments were perceived as necessary to create mutual trust and obligations. An additional observation supporting this emphasis on social relationships and support is one of the managers’ saying: “Yesterday I joined A (a fisher) to inspect his new vessel”.

An interesting strategy aimed at controlling the input of raw materials has emerged through recent attempts to farm whitefish species such as cod, halibut and catfish. If successful, this strategy would compare to the situation in the salmon-farming industry, where firms produce (farm) their own raw materials under relatively controllable conditions (see e.g. Ottesen & Grønhaug, 2001). However, few commercial attempts to farm whitefish species can be considered successful (and none of the firms we visited had applied this strategy). This can probably be attributed to insufficient technology, especially for managing the early stages of this kind of farming. Interestingly, cod farming seems to get considerable attention every time there is a crisis in terms of sharply reduced fishing quotas, as is the case today. Accordingly, several major actors and government bodies are now making large investments in the farming of whitefish species. It should also be noted that one of the firms we visited farm salmon in combined with its main activity, i.e. the processing of whitefish. This is, however, a rather unusual combination in the seafood industry.

#### *Adjusting to Uncertain Supply*

Several coping strategies that aim to adjust or adapt to supply uncertainty were identified. For example, we observed that the development of flexible production was a strategy applied to adjust to uncertain supply, as reflected in the following quote:

We have four production lines in order to be flexible with regard to the raw material.

It should be noted that the various production lines are suited to and demand different types of raw materials. This makes it possible for this producer to handle different types of fish (species) of variable quality. Thus, the development of product-mix flexibility can be

conceived as a response to variations in raw material type and quality (cf. Anderson, 1995). Previous research has shown that this type of flexibility is an important predictor of survival and success in this industry (Dreyer, 1998; Dreyer & Grønhaug, 2001). Another manager expressed a need to build the product mix around the character of supply (and demand), i.e.:

We base our product mix on the limitations we have at both ends [i.e. the input and output markets] because there is often a discrepancy between the kind of supplies we get and what the market wants.

We also observed that some of the firms build their own buffer zone by developing stocks of raw materials. This primarily happens through freezing fresh fish or by purchasing and stocking large volumes of frozen fish blocks/fillets from freezer trawlers. This strategy has, however, several drawbacks. For example, it imposes storage costs and can be risky because the (global) market for frozen whitefish products is a highly competitive one with fluctuating prices. Thus, trying to “buffer” production can prove costly as one of the managers had so painfully experienced. At one point in time, his firm had bought a rather large quantity at relatively high prices. The demand for processed products then dropped, forcing the firm to sell at lower prices than their costs. It should also be noted that frozen raw materials have limited usage, e.g. they can no longer be sold in the fresh fish market.

Several of the firms also try to develop a portfolio of raw materials suppliers (fishing vessels) who exhibit different patterns of instability. For example, large seagoing trawlers can supplement small coastal vessels, which are vulnerable to poor weather conditions.

Furthermore, it was observed that firms apply “marketing tactics” to their buying (cf. Kotler & Levy, 1973). For example, a frequently observed strategy in times of raw material shortage is to offer a high price (Dreyer *et al.*, 1998). In addition, most of the firms compete in the raw material market by offering inducements in addition to the price (cf. Kotler & Levy, 1973), e.g. by offering various services to fishing vessels to make it more attractive to land the fish at a particular plant (and place). Such “services” may include the sales of necessary inputs for the vessels, such as bunker fuel and food, as well as facilities for the crew to stay overnight if needed. The managers also try to build informal relationships or social contracts (cf. Macneil, 1980) with boat owners, as indicated by the following quote:

It is important [in order to secure supplies] to have good contact with each of the boats, but we do not have written contracts [for raw material delivery] with anyone.

### *Reducing the Effects of Supply Uncertainty in the Output Market*

Several strategies were applied to “buffer” the effects of uncertain input factors in the output market. For example, firms were found to reduce the possible effects of uncertain input factors on their output by *avoiding* long-term contracts with customers, thus remaining flexible and steering clear of promises that might be difficult to fulfil.

Another strategy we observed was to educate customers about salient characteristics of the final product and its delivery, such as the high degree of perishability and seasonal variations in deliveries of fresh seafood products. This is illustrated in the following quotes:

We often bring our customers here to learn from them. This also puts them in a position to understand our problems better, for instance, the seasonal variations.

We have to go to the buyers and sell the argument that fisheries are seasonal (...) however, when we go further down the market we often wonder whether those who decide know what this is all about – that it is a natural product we are talking about.

Attempts to educate the customer have also been observed in the Norwegian salmon-farming industry (Ottesen & Grønhaug, 2001). Here, a firm with a large contract with a major Japanese customer supports this relationship by means of a web-based software package developed for exclusive mutual exchange of information. According to the top manager, this program is important as an educational device for teaching the customer about the constraints and challenges of dealing with a biological raw material. The software allows the customer to follow the management (e.g. feeding regime) and subsequent development of quality attributes which are measured weekly (e.g. size composition of batch, fat content, flesh colour). In due time, this particular batch of salmon (separate cages) will be sold to this particular customer.

Finally, we observed that several of the managers, in striving to exhibit purposeful behaviours in the marketplace, try to benefit from understanding and anticipating the fluctuations in supply. Close inspection of a quote from one of the managers presented earlier, indicates this, i.e.: “If you don’t know what you will get in, you sure don’t know what you’ll get out.” Another manager was more explicit when we asked him what kind of information was important for a market-oriented firm. He gave this answer:

It’s the latest news – it is the jungle telegraph and it is about being awake and creative. That’s all. There is no point in selling a lot of saithe if you do not know that the quota

is just about to be fished [which means that fishing will be stopped] – that’s because in this particular fishery we often write sales contracts with our customers before the fish has been caught. I get information when I speak with the fishers, the exporting firms, FNL [a producer organisation], through the media, and friends.

Inspection of this quote shows that information about the supply situation is emphasised and that it can prove crucial in terms of market behaviours. Several other managers emphasised the need for information about the supply situation in order to initiate adequate market actions. One of the managers in a firm selling standardised products in a highly competitive market, provided an elaborate example of how a sudden and unexpected lack of raw materials had resulted in substantial market fluctuations. This involved a short-term price increase of 50 per cent followed by “consumers reducing their consumption by 20 per cent, which in turn led prices to hit the absolute bottom.”

## Discussion

The reported study revealed that firms exposed to highly unpredictable supply environments apply a variety of strategies to secure vital input factors. These strategies are summarised in Table 1.

**Table 1. Coping Strategies and Scope**

Coping Strategies	Scope
-Majority ownership in vessels -Minority ownership in vessels -Loans to fishers -Marketing tactics -Social contracts	-Secure share of catch
-Build stocks of raw materials -Build a portfolio of suppliers -Farming of salmon	-Buffer supply fluctuations
-Flexible production	-Adjust to variation in type and quality of the raw material
-Information about supply -Avoid long-term contracts with downstream customers -Educate customers	-Reduce the effect of input uncertainty in the output market

Most of the firms rely on a combination of two or more strategies but varied greatly in their choice of strategies – or rather their portfolio of strategies. For example, one firm relied mainly on majority ownership in fishing vessels to cope with uncertain supply, while another

firm relied on minority investments in vessels, combined with social contracts and information about the supply situation.

How can the large diversity in strategies between firms be explained? Several factors may shed light on this question. One explanation is that uncertainty regarding supply is ambiguous and relates to different issues such as uncertainty regarding volume availability or the quality of the acquired raw material. Accordingly, different strategies are applied to cope with different types of supply uncertainty. For example, through vertical integration firms aim to secure their share of the catch, whereas flexible production primarily is applied to handle different types and qualities of raw material. Thus, the type of supply uncertainty can to some extent explain a combination of strategies. However, inspection of Table 1 shows that many of the strategies overlap in their scope, which indicate that there are other factors at play here. One such factor can be that actors perceive “the problem of securing supply” differently, and thus that their mental models of how to cope with uncertain supply differ. As indicated in the theoretical discussion, such differences can be expected when managers vary in their immediate contexts and activities as was the case here (cf. Day & Nedungadi, 1994; Dearborn & Simon, 1958; Rosch *et al.*, 1976). It should also be noted that, in a turbulent supply environment where a “correct” strategy probably does not exist, the different actors are likely to experiment with new ways to cope. However, since a right strategy does not exist, such learning may be slow, which may explain the wide range of strategies.

In the theoretical discussion at the beginning of the article, we focused on vertical integration as a means of securing uncertain supply. In this study, we found that vertical integration is central in the managers’ understanding of how to cope with uncertain supply. This corresponds well with the findings of Dreyer *et al.* (1998), who reported that “control over supply” was the main motive for backwards integration. The same research showed that 85% of the firms included in the study (N=72) considered investing in (more) vessels in the future. However, in most cases, backward vertical integration only helps secure a small fraction of the necessary supplies. Together, these observations indicate that the concept of vertical integration has been adopted and applied more or less disconnected from the realities of the present context. Here, firms are not allowed to have majority ownership in vessels, and they face a type of primary uncertainty that is impossible to control *per se*, i.e. the supply situation is in the hands of “Our Lord” as one of our informants put it.



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**IV**



**Paper IV: Do Managerial Team Members Share  
Mental Models of Market Orientation?  
An Exploratory Study\***

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# **Do Managerial Team Members Share Mental Models of Market Orientation? An Exploratory Study**

Geir Grundvåg Ottesen

## **Abstract**

In the literature on market orientation, it is widely assumed that market orientation and its associated benefits are closely related to the sharing of market-oriented beliefs and values among organization members. However, the precise meaning of “sharing” is seldom discussed, and little empirical research exists. The purpose of the present study was to explore whether, and to what extent, organization members share mental models of market orientation. A comparison of the mental models across the members of a top management team showed great diversity in thinking about market orientation. In spite of this, the team appears to perform well. The explanation offered is that the team agrees with regard to the most important component of their mental models (i.e. customers), as well as a complementary focus, which may improve access to market information and understanding.

*Keywords:* market orientation, shared mental models, top management teams

## **Introduction**

A central element in the “theory” of market orientation is consensus among organization members in terms of their market-oriented beliefs and values. It is widely assumed that consensus in market-oriented thinking will lead firm members to collect and use market information in a concerted or coordinated effort to create superior customer value. Deshpandé and Webster (1989) build on Smircich's (1983) work on organization culture to develop the “consensus” hypothesis of market orientation. They state that “...the marketing concept defines a distinct organizational culture, a fundamental shared set of beliefs and values that put the customer in the center of the firm’s thinking about strategy and operations.” (p.3). This argument is frequently integrated into articles on firms’ market orientation (see e.g. Day, 1994; Deshpandé, Farley and Webster, 1993; Deshpandé and Webster, 1989; Sinkula, Baker

and Noordewier, 1997; Slater and Narver, 1995). The various authors are, however, relatively silent as regards the precise meaning of “a fundamental shared set of beliefs and values”, e.g. how much shared thinking is possible and/or desirable? This is a relevant question, since work on organization culture generally assumes the existence of multiple thought worlds in organizations (Smircich, 1983). It should also be noted that too high a degree of sharing may be less desirable, as demonstrated in the literatures on groupthink (Janis, 1972) and teams (e.g. Madhavan and Grover, 1998). Moreover, the marketing literature provides little empirical evidence of the extent to which individual organization members in market-oriented firms adopt a shared focus in their market-oriented thinking. In fact, a recent study of organization members’ beliefs about customer focus demonstrated the opposite (Allen *et al.*, 1998). It thus appears that, in spite of the centrality of the consensus argument in the literature on market orientation, little research has been devoted to exploring the notion of shared mental models and its anticipated benefits as they relate to firms’ market orientation.

This paper addresses the question of whether, and to what extent organization members share mental models of market orientation. To gain insight into this question, an exploratory study was conducted of the top management team in a successful firm. By focusing on a well-functioning management team, the conditions for capturing shared cognition should be optimized and thus provide a suitable setting for exploring the research question. This also facilitates an in-depth understanding of factors which may explain sharing/diversity in actors’ conceptions of market orientation. The remainder of the paper is organized as follows: The next section explains the theoretical perspective underlying the study. Here the role and functioning of individuals’ mental models are discussed. This section also addresses the notion of shared mental models and how they are “created”, and how such shared mental models may help team/organization members to process information effectively. Then the research methodology for the empirical study is outlined. Next, the findings are presented, and finally, conclusions are drawn and implications highlighted.

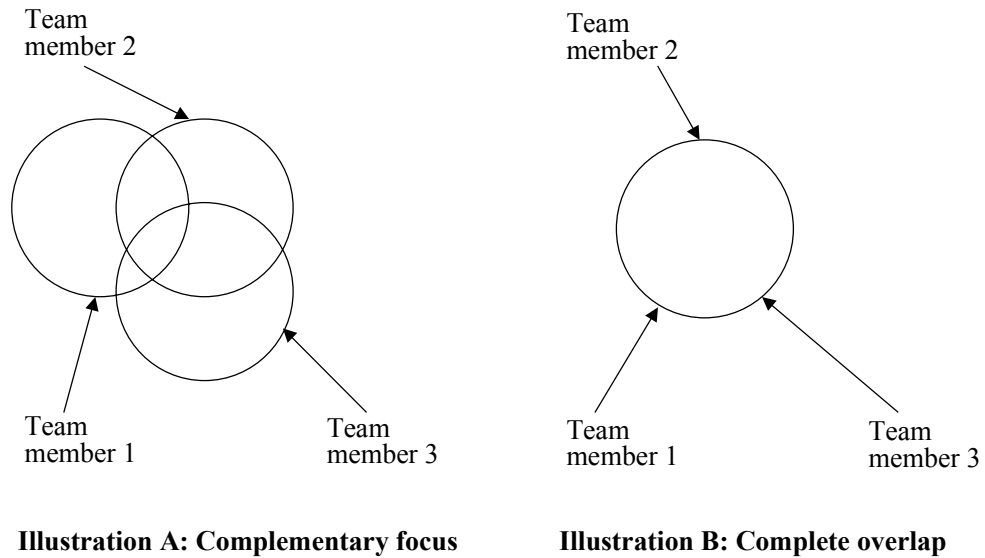
### **Shared Mental Models**

Firms and their management, facing an increasingly turbulent environment, are exposed to more information than they can assimilate and comprehend. This relates to the fact that managers, like other people, are restricted by the limits of their cognitive capacity, i.e. their capacity to notice, interpret, store and make sense of data is restricted (Simon, 1957).



Constrained by their cognitive limitations, managers must, however, try to understand and interpret the environment in which they are embedded and decide how to act in order to perform well. To adapt effectively to their environments, managers, often unconsciously, construct “mental models”, i.e. mentally constructed “road maps” of what works and how to act (cf. Johnson-Laird, 1983). Mental models consist of interrelated categories or concepts that help managers, and others, to organize and process information effectively because they give focus, drive attention, and contribute to what is noted. This relates to cognitive processes involved in categorization, i.e. basic cognitive activities related to conceptualization and understanding (cf. Rosch, 1978). Categorization influences the noticing and interpretation of stimuli (data) as well as what data are noted and how they are structured. An important point is that actors’ categories mainly develop through interactions with their environment (Rosch *et al.*, 1976). This means that, over time, mental models and the inherent concepts become more or less suited to the context in which the actor is embedded and operates (see e.g. Day and Nedungadi, 1994; Rosch, 1978). Because the “reality” of managers is constructed and grasped through the mental models they hold, these models influence their attentional focus and understanding of environmental events and situations.

When individual managers are brought together in a team, each with their own knowledge about a particular domain (e.g. the competitive environment), some kind of emergent collective mental model is likely to exist (Walsh, 1995). When team members interact with each other, shared prior knowledge becomes “a resource to negotiate or construct a shared understanding of their particular situation” (Hutchins and Klausen, 1996, p.23). For example, when a firm is led by a team of managers, one may expect that, through extensive discussions, they will develop similar perspectives of, e.g. how to compete in the markets where their firm operates. In other words, their mental models of competitive advantage (Day and Nedungadi, 1994) can overlap to a substantial degree. This implies that *shared mental models* can be created in team settings. Figure 1 shows two principal forms of knowledge sharing in a team with three team members. The “content” of each team member’s mental models of the same domain or subject area is depicted as a circle.



**Figure 1. Two illustrations of how mental models may be shared between three team members.**

The figure consists of two parts, A and B. Inspection of Illustration A in Figure 1 shows that some parts of the team members' mental models overlap and some do not. Illustration A also shows that an uneven individual representation in the shared mental model is possible (Langfield-Smith, 1992; Walsh, 1995). For example, team members 1 and 3 share mental models to a lesser degree than do team members 1 and 2. It should also be noted that the three managers might *complement* one another's knowledge through the "areas" which do *not* overlap. Illustration B in Figure 1 depicts a situation where the three managers' mental models are completely shared. Extensive research in cognitive psychology shows, however, that completely shared cognition is difficult (or impossible) to achieve. And if team members' thoughts were identical (or close to identical), we might ask whether there would be anything to gain from working as a team, since members would not bring new knowledge or skills. The fallacy of groupthink would also be a likely consequence of too much conformity in thinking (Janis, 1972).

As with individuals' mental models, shared mental models in any of the forms discussed above impose meaning on managers' information environment. In relation to market orientation, Slater and Narver (1995, p.63) state that: "A market orientation is valuable because it focuses the organization on (1) continuously collecting information about target-customers' needs and competitors' capabilities and (2) using this information to create

continuously superior customer value.” This implies that the shared market-oriented values and beliefs lead organization members to collect, interpret and use market information within the parameters set by the shared mental model. As such, shared mental models of market orientation may facilitate problem definition, alternative generation, evaluation, and choice (cf. Walsh *et al.*, 1988). This implies that team members, through the “lens” of a shared mental model of market orientation, will process more relevant market information faster (Thomas and McDaniel, 1990). In this way, effectiveness in market information processing is enhanced. From this it follows that a market orientation and its associated benefits are closely related to the sharing of mental models by team members.

How do team members’ mental models become similar? When managers enter a top team they bring mental models influenced by educational background and work experience (Dearborn and Simon, 1958). To the extent that team members interact with each other, their views and insights are brought into close(er) alignment (Bettenhausen and Murnighan, 1985; Chattopadhyay *et al.*, 1999; Geletkanycz and Hambrick, 1997; Hutchins and Klausen, 1996). This builds on the observation that social interaction encourages conformity in perspectives (Janis, 1972). Consequently, the more the team members interact with each other, the more similarly they are likely to think.

On the other hand, there are conditions which may lead to differences in thinking. In particular, this pertains to the fact that managers in a team will typically have different tasks and responsibilities. For example, one manager may be responsible for customer relations, whereas another may be responsible for competitor intelligence or product development. According to the seminal work by Dearborn and Simon (1958), individuals tend to focus on the activities they are involved in and thus “select” their perspective from their natural point of reference. Managers may thus develop a viewpoint that is consistent with their tasks and responsibilities. Haukedal and Grønhaug (1994) point out that the tendency to develop “selective” perspectives might also be explained by the availability of information (cf. Tversky and Kahneman, 1973). For example, through differences in their boundary spanning roles, managers may be exposed to partly different information environments, which implies that different types of information are more readily available to each manager. The influence of external contacts extends beyond information exposure to influence interpretations as well. As argued by Geletkanycz and Hambrick (1997), managers, due to bounded rationality, rely on the experiences and interpretations of their counterparts (cf. Berger and Luckmann, 1967). This means that social interaction with different external constituencies may influence

managers' perspectives and lead to differences in thinking (Geletkanycz and Hambrick, 1997).

The above discussion indicates that shared mental models of market orientation in managerial teams are to some extent possible. A range of factors may, however, influence the extent to which team members share mental models of market orientation. As discussed above, some of these factors “work” toward a sharing of perspectives, other factors may have the opposite effect. Present insights are, however, modest and make it difficult to advance specific predictions (hypotheses) about the influence of these factors on the sharing of mental models in a team setting.

### **Research Methodology**

Due to modest *a priori* insights, an exploratory approach was chosen for the present study. To examine the stated research question, i.e. whether, and to what extent, organization members share mental models of market orientation, a top management team in one successful firm was selected for study. As emphasized above, a market orientation and its associated benefits (e.g. profitability) are closely related to organization members' sharing of mental models. Consequently, by selecting a successful firm, it is believed that team members will, to some extent, share mental models of market orientation. Good company performance also indicates a well-functioning top management team (Hambrick and Mason, 1984). A team setting was selected because the conditions for shared cognition are believed to be more “fertile” than in a larger setting such as a business firm, where multiple thought worlds may prevail (cf. Smircich, 1983).

To meet the purpose of the present investigation, the research design must allow the capturing of team members' mental models of market orientation. The top management team in one firm, Alfa, was selected for the study. Alfa is a medium-sized firm in the Norwegian seafood industry, a turbulent industry where firms, including Alfa, typically sell low-to-moderately differentiated seafood products in global markets. The industry has experienced several shakeouts due to overcapacity caused by sudden drops in fishing quotas (see e.g. Dreyer and Grønhaug, forthcoming). In spite of turbulent conditions, Alfa's profitability has been among the top 25% of firms in the filleting branch of the industry for the last three years. This indicates that the way Alfa has adapted to its environment has been successful. Appendixes A and B show selected characteristics of Alfa and its three top managers.

To gain insights regarding the firm, its activities and performance, and the managers' mental models of market orientation, we made use of multiple data sources. Secondary printed information, including annual reports, articles in the business press and accounting data from Dun & Bradstreet allowed us to trace Alfa's turnover and profitability over a number of years.

To capture managers' mental models of market orientation, lengthy, semi-structured interviews with the team members were conducted. Alfa's three senior managers were identified and appointments for interviews were made prior to the interviews. General, broad questions formed the basis for discussions with the managers, e.g.: "What does market orientation mean to you?" and "What does a market-oriented firm do?" The interviews took place very much as conversations, with emphasis on letting the managers play the active role. Emphasis was put on eliciting the managers' *own* interpretations of market orientation. The three managers had few problems in discussing the meaning of "market orientation", indicating that the concept is familiar to them. It was assumed that the managers, when confronted with a well-known concept (or "label", e.g. "market orientation"), would focus on and recall aspects central to their understanding of that concept. Because market orientation represents a specific way of thinking and behaving, it was also believed that they would hold ideas about influencing factors as well as the consequences of being market-oriented. This implies that "market orientation" would have some kind of mental representation that could be captured by the researcher (cf. Huff, 1990).

Individual interviews with the three managers were carried out on the same day. This was done because it seemed possible that the managers could be "triggered" by the interviews to discuss the term "market orientation" with other team members, which in turn might have led the team members to negotiate a (more) shared understanding of market orientation. All the interviews were tape-recorded and transcribed. The transcribed interviews were content-analyzed with an emphasis on identifying the use of categories and factors emphasized, in order to understand how the managers had assigned meaning to the concept of market orientation. The managers had few problems in discussing the meaning of market orientation, and their statements were rather explicit. This reduced the possibility of the researcher making biased or erroneous interpretations of the text. The straightforward and explicit statements also indicate that the "less orderly structure" typically associated with maps defining abstract strategy concepts, is not a problem here (cf. Huff, 1990, p.27). The resulting categories made it possible to compare the central aspects of team members' mental models of market orientation. No attempt was made to capture how each manager relates these categories in

terms of cause and effect relationships (see e.g. Langfield-Smith, 1992). Although such an approach would give a more comprehensive grasp of the managers' mental models, it would also be more difficult to compare their mental models.

## Findings

In this section, findings regarding the three managers' mental models of market orientation, and the extent to which they overlap, are presented.

During discussions about market orientation, a range of "issues" came up. For example, issues regarding customers, including e.g. their significance and relationships with Alfa, were frequently mentioned. In many cases, such issues were explicitly linked to market orientation, e.g.: "Market orientation is about keeping ourselves informed about what is going on – trends as regards what is sold at the retailers and what we should emphasize." In other cases, issues were not directly linked to market orientation, but rather "brought-out" during discussions of market orientation. In both cases this indicates that the various issues are more or less associated with how the managers' think about market orientation. Thus, these issues represent the managers' verbalization of their mental models of market orientation, which implies that their mental models of market orientation have to some extent been captured by the researcher (cf. Huff, 1990). The various issues were categorized by the researcher and are displayed in Table 1.

**Table 1. Categories assigned to the managers' mental models of market orientation**

	<i>General Manager</i>	<i>Second-in- Command</i>	<i>Sales and Production Manager</i>
Customers	X	X	X
Raw materials	X	X	-
Information	X	X	X
Market price	X	X	-
Production planning	-	X	X
New product development	-	-	X
Networks/Relationships	X	X	X

It can be seen from Table 1 that only “external” issues are assigned to the general manager’s mental model of market orientation, whereas for the other two managers internal issues are included as well, i.e. “production planning” and “new product development”. This may reflect the more externally focused tasks of a general manager. From Table 1, it can also be seen that, for the sales and production manager, three categories are assigned to his mental model of market orientation, i.e.: “customers”, “production planning” and “new product development”. These categories may reflect his role as a connecting link between customers and Alfa’s production managers, forwarding and discussing customer requests relating to product adjustments and developments (for further details on tasks and responsibilities, see Appendix B).

Inspection of Table 1 shows that “customers”, “information”, “production planning”, “new product development” and “networks/relationships” are assigned as parts of one or more of the three managers’ mental models of market orientation. These categories are consistent with the intentions of the theoretical construct as reflected in the academic literature (see e.g. (Kohli and Jaworski, 1990; Narver and Slater, 1990). Note also that, in line with the marketing literature, “customers” appear to have a prominent place in the managers’ thinking about market orientation. When the three managers were asked about market orientation, customer issues were mentioned first. This indicates that this category is important and more readily available in the managers’ memory, and thus comes more easily to mind than any of the other issues (cf. Tversky and Kahneman, 1973). This implies that “customers” is the most important of the categories associated with market orientation.

An interesting observation is that “raw materials” were associated with market orientation, and surprisingly, competitors were not (see Table 1). These observations deviate from the conventional view of market orientation and thus deserve some further comment. Why are “raw materials” associated with market orientation? The answer may be relatively simple. In the seafood industry the delivery of raw material (i.e. fish caught at sea) is encumbered with high uncertainty, both in terms of availability and quality (see e.g. Dreyer and Grønhaug, forthcoming; Prochaska, 1984; Young, 1987). A key element of satisfying customers, which is of crucial importance for market orientation, is an adequate and timely supply of raw materials. This means that, in this industry, market-place behavior is strongly influenced by the character of the input (cf. Katz and Kahn, 1978). Consequently, in order to serve their customers, uncertain supply must be dealt with.

Why are competitors not associated with market orientation, as commonly assumed in the market orientation literature? In the markets where Alfa operates, there are many sellers,

products are rather homogenous, and customer preferences are well known and relatively stable. In this situation, the market price is influenced by fluctuations in supply, primarily caused by variation in seller nations' competitiveness. For example, when the yearly catch quota for Icelandic cod is reduced, the market price in many market segments is likely to increase and may create an opportunity to obtain a higher price for a relatively short period, i.e. a strategic window emerges (cf. Abell, 1978). Hence, opportunities for making profits are "driven" by factors outside the influence of specific competitors, which probably explains why competitors are not mentioned.

Another interesting observation was that, in their thinking, the managers relate market orientation to issues of apparent importance to them (or rather Alfa). For example, the general manager relates market orientation directly to Alfa's survival, i.e.: "It [market orientation] is the reason why we have survived." The other managers expressed similar thoughts. This indicates that market orientation constitutes a central part of the managers' mental models of competitive advantage. The centrality of their mental models of market orientation indicates that they (the mental models) should to some extent drive the managers' attention and contribute to what they note as well as how information is interpreted and used (cf. Zaltman *et al.*, 1982).

Do the three managers "share" mental models of market orientation? Table 1 shows that all the three managers share only three out of seven categories. Inspection of Table 1 also shows that the categories are unevenly "distributed" within the team. For example, "new product development" is assigned to only one of the managers, and the general manager and the second-in-command share more categories than do the general manager and the sales and production manager. This indicates that the three managers' mental models of market orientation are shared only to a limited degree. This observation deserves some further comment and is discussed in the next section.

## **Discussion**

The purpose of the present study was to explore whether, and to what extent, top-team members share market-oriented mental models. A comparison of mental models across the members of a well-functioning top management team showed large diversity in focus, as only three out of seven categories were shared by all three team-members. At first sight, this is surprising. It was expected that, in a top management team in a firm that was performing well,



the conditions for shared cognition would be “optimal”. It should also be noted that the team has worked closely together for several years. This means that, through shared experiences and discussions of various situations and events, the team has had plenty of opportunity to negotiate a shared understanding of how to cope in the highly competitive context in which Alfa is embedded and operates. Furthermore, good company performance indicates that the focus of the top management team, and thus what they pay attention to and emphasize, has had a positive impact on the firm’s choice of actions (cf. Hambrick and Mason, 1984). Thus, in spite of the observed diversity in mental models across the managers, the team appears to perform well.

How can this apparent paradox be explained? One explanation may be that the three managers agree with regard to the most important category (i.e. customers), which may provide a foundation for a consistent pattern of thinking and activity. It may also be that the observed diversity in mental models implies a *complementary* focus, which results in the collection of non-redundant information. Furthermore, differences in perspectives may lead to more comprehensive and constructive discussions and interpretations of the “broader” picture, which may prevent insensitivity to challenges from unexpected directions (cf. Day, 1994; Porac and Thomas, 1990). It is also likely that, when faced with important strategic decisions, the managers will discuss carefully the various issues involved, which means that they can construct a shared understanding of the particular situation at hand. Together, these factors may improve access to market information and understanding, and lead to more appropriate decisions and actions, which seems a crucial ability in the highly turbulent environment in which Alfa operates.

In the theoretical discussion, it was emphasized that completely shared cognition is difficult (or impossible) to achieve, and that this may be less desirable due to the possible reduction in cognitive variety and the dangers of groupthink. At the same time, excessive differences in thinking may lead to strong disagreement in interpretations and block communication between team members (see e.g. Cohen and Levinthal, 1990; Daft and Lengel, 1986; Smith *et al.*, 1994). The present findings and discussion indicate that the relationship between benefiting from sharing in mental models across members of top management teams has an inverted U-shape. It thus appears that finding the “right” level (and type) of sharing is a crucial task in a team setting.

This study represents an early attempt to explore the consensus hypothesis in marketing. It appears that the sharing of mental models has potential, but also that the relationship with associated benefits is not as straightforward as that reflected in the market

orientation literature. To further our understanding of the role of shared cognition and its associated benefits, additional studies should be conducted, including new settings and also more members of organizations.

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## Appendix A. Some company characteristics

Established	1939
Turnover:	1998: 102 NOK mill (US\$10.86 million)
Profitability (ROI)	1998: 6.9% 1997: 13.7% 1996: 9.9%
Products	Alfa produces two main types of frozen seafood products from whitefish species (cod, haddock and saithe): (1) Specialty products (various types of cuts from fish fillet) and (2) frozen fish blocks (fish fillets and cuts from fish production, which are mixed and frozen into a fish block of standard measures). The fish block is used by Alfa's customers in secondary processing, i.e. production of fish fingers and other value-added frozen seafood products.
Customers	Specialty products are mainly sold to Norwegian and Danish wholesalers. Frozen fish block is sold to large customers in the UK, France and Germany. In 1997, the five largest customers bought 79% of Alfa's total sales.
Top management team	General manager, second in command, sales and production manager
Other staff and workers	Alfa has 5 administrative staff and 5 middle managers responsible for various aspects of production and employs some 130 workers in production.

## Appendix B. Managerial Characteristics and Tasks

General Manager	<p>Age: 60 years.</p> <p><i>Education and work experience:</i> two years of business administration. Took over the company after his father and has been general manager for the last 28 years.</p> <p><i>Main tasks and responsibilities:</i> Runs the company. Alfa's main contact with the largest customers as well as suppliers. This contact involves negotiations and contracts. Holds board positions in industrial bodies and one large investment firm.</p>
Second-in-Command	<p>Age: 32 years.</p> <p><i>Education and work experience:</i> Master of Management. Worked for four years in governmental agencies. Has been part of the top management team for three years.</p> <p><i>Main tasks and responsibilities:</i> Organizational development. Alfa's main contact with governmental agencies. Also engaged in various joint projects with local firms. Board member in two local firms.</p>
Sales and Production Manager	<p>Age: 34 years.</p> <p><i>Education and work experience:</i> MSc in Fisheries. Has been part of the top management team for eight years.</p> <p><i>Main tasks and responsibilities:</i> Purchasing, production, sales and information technology. Takes care of the implementation of customer contracts and sells Alfa's commodity products (frozen fish block). Is a main link between customers and production. Also engaged in various joint projects with local firms.</p>





V





# **Paper V: Exploring the Accuracy of Managers' Network Perceptions\***

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# Exploring the Accuracy of Managers' Network Perceptions

Geir Grundvåg Ottesen  
Lene Foss  
and  
Kjell Grønhaug

## Abstract

This study addresses the accuracy of managers' perceptions of their strategic networks, i.e., networks with which they exchange important environmental information. The accuracy of network perceptions is important for managers because their organisation often needs to adjust its positions in, and utilise, networks in response to new information needs and to fully exploit their limited time and capacity to exchange relevant information. We study the accuracy of managers' perceptions of interaction intensity with external actors to capture an important dimension of managers' and their organisations' network perceptions. By comparing managers' perceived frequency of information exchanges with an "objective" tracking of their actual behaviour, we revealed substantial perceptual errors. We also found that both the frequency and perceived importance of information exchanges with strategic network members lead to erroneous perceptions. Implications of these findings are highlighted.

*Keywords:* Managers, information, strategic networks, perception accuracy

## Introduction

In small and medium-sized firms, senior managers play a central role in guiding and directing their firms' activities. To do so adequately, managers need timely and relevant information to take advantage of opportunities and to avoid threats that may arise. Important information is obtained through interactions with customers, suppliers, competitors, and other knowledgeable actors. Managers also interact, with for instance, customers and regulatory constituencies to exert influence (Jaworski *et al.*, 2000). This implies that firms and their managers are embedded in strategic networks encompassing multiple organisational actors

with which valuable information is exchanged (Gulati *et al.*, 2000). To take full advantage of their strategic networks, it is paramount that managers use their limited information-processing capacity to exchange timely and relevant information with the most knowledgeable or important external actors. To do so, managers need knowledge about their networks, including how much time/resources they should spend on interacting with various external actors or sectors. Accurate perceptions about how time is spent on various network members is important because it indicates whether limited attention and information-processing resources have been exploited as intended. Accurate network perceptions are also relevant to adjust strategic networks in response to changing conditions and information needs. This is particularly so when the capacity to deal with external networks is utilised to its limit and when interacting with one actor (or sector) comes at the expense of interacting with other actors/sectors. Thus, inaccurate network perceptions may impair managers' ability to allocate their limited networking resources in an adequate manner.

From the above discussion, it follows that the accuracy of managers' network perceptions is crucial for managing and adjusting strategic networks. However, research findings indicate that managers often have inaccurate perceptions of the world in which they are embedded and operate (Starbuck and Mezias, 1996; Sutcliffe, 1994). This indicates that managers' network perceptions might also be inaccurate. However, only modest research has been conducted to examine the accuracy of managers' network perceptions (for a notable exception, see Bernard *et al.*, 1981).

In this study, we limit our investigation to managers' perceptions of the interaction *intensity* within their strategic networks, i.e., the *frequency* of information exchange with different network members such as customers and other important external actors. We also address factors that may influence the accuracy of such perceptions. By examining managers' (or firms') frequencies of external information exchanges, we are capable of capturing aspects of both how they use their limited information-processing resources, as well as the accuracy of their perceptions.

The remainder of the paper is organised as follows: In the next section, the theoretical perspective is outlined. Here we draw on insights from cognitive psychology to provide an initial understanding of why and under what circumstances managers and others may fail to perceive the intensity of their network interactions accurately. We then report the research methodology underlying our empirical study of the three members of the top management team in a business firm embedded in the highly competitive seafood industry. To assess the

accuracy of managers' perceptions, we make use of two data sources, i.e., a structured questionnaire to capture managers' perceptions of the frequency of their information exchanges, and a diary to track their behaviours objectively. We report the results of our investigation, and finally, we discuss our findings and highlight their implications.

### **Theoretical perspective**

What are the reasons, if any, to raise doubts about the accuracy of managers' perceptions of external information exchange? One answer is found in the psychology of perception, where a distinction is made between the *stimulus* and the *stimulus object* (Crech *et al.*, 1974). A stimulus object is something that is the source of a stimulus, while a stimulus can be seen as the data associated with the stimulus object reaching the perceiver. The entry of a new competitor or a substitute product, for example, are stimulus objects, which may be registered or not by the manager. The essential point is that stimuli originate in, but need not be identical with the objective changes taking place in the environment. Thus, there may arise discrepancies between what is perceived and "the real thing". An additional factor that may influence the match between managers' perceptions and actual events is that managers are exposed to more data than they can possibly register, interpret and assimilate. This relates to the observation that managers, like other people, are restricted by the limits of their cognitive capacity, i.e., their capacity to notice, interpret, store and make use of data is restricted (Simon, 1957). The limited cognitive capacity to deal with an excess of data (stimuli) makes it harder for managers (and thus organisations) to perceive their external information exchanges accurately.

In a series of studies, Bernard and colleagues compared data obtained via questionnaires and similar records with objective behavioural records, such as diaries and monitoring of radio communications. Their main conclusion was that "people do not know with any acceptable accuracy, to whom they talk over any given period of time" (Bernard *et al.*, 1981, p.15).

In the present study, we are concerned with the accuracy of managers' perceptions of the frequency of their information exchanges with important external actors. More precisely, we are concerned with how accurately managers perceive their own interactional behaviour. The literature on respondents' answers to questions about behavioural frequency in surveys gives some indications about how managers may perceive the frequency of their behaviours.

For example, from this literature it is known that both *regularity* and *frequency* influence how accurately individuals perceive their behaviours (see, e.g., Blair and Burton, 1987; Burton and Blair, 1991; Menon, 1993; Menon *et al.*, 1995). Research findings also suggest that people have the ability to learn *temporal* and *sequential* patterns, which makes memory-based information more accessible for regular behaviours (Menon *et al.*, 1995). For example, subjects may use a rate of occurrence of “twice a day” to calculate how often they brush their teeth every week. This observation is relevant because managers embedded in turbulent environments are often engaged in *irregular* exchanges of information (Aguilar, 1967; Mintzberg, 1973). Accordingly, they may find it difficult to perceive frequency accurately.

Another relevant point is that the frequency of *frequent* behaviours is not easily accessible in episodic memory (Schwarz, 1990). This is explained by the tendency for multiple instances of similar behaviours to blend into a generic representation, which makes it difficult to isolate individual episodes (Menon *et al.*, 1995). Consequently, frequency of behaviour may also affect managers’ perceptions of their information exchanges. Research findings reported by, e.g., Aguilar (1967) and Mintzberg (1973) demonstrate that managers are busy people engaged in frequent information exchanges with multiple external actors. Accordingly, information about past behaviour can be difficult to access from episodic memory, a tendency that is strengthened when such behaviour tends to be irregular.

From the above discussion it follows that *irregular* and *frequent* behaviours can be difficult or impossible to recall exactly. It should be noted that such conditions, although regarded as common, represent the most difficult situations to perceive accurately. In such situations, managers are likely to rely on *estimation strategies* to generate reasonable estimates of their behaviour (cf. Burton and Blair, 1991; Menon *et al.*, 1995). This tendency has implications for their ability to perceive accurately the frequency of their information exchange with external strategic network members. First, any estimation strategy is based, to some extent, on the experiences and expectations of the manager, which are based on past perceptions. These initial perceptions may be erroneous. Second, when trying to recall earlier experiences, expectations and perceptions from episodic memory, managers may fail to recall such information accurately. Third, as will be discussed below, the estimation strategies applied may be biased.

An important estimation strategy is the application of inferential rules or heuristics (Tversky and Kahneman, 1974). These heuristics are applied subconsciously and are helpful in reducing complex mental tasks to simpler ones (Fiske and Taylor, 1991). An important

heuristic is the *availability* heuristic (Tversky and Kahneman, 1973). Availability refers to the accessibility of events in the subject's memory and is based on the previous experience of the subject. Thus, the availability heuristic may lead people to perceive a future event to be likely or frequent if it is easy to recall past occurrences of that event (Fiske & Taylor, 1991; Schwenk, 1988; Tversky & Kahneman, 1973). An event that "sticks out" (e.g., an unexpected visit from a potential customer) is easy to recall because its *salience* increases the availability of the event in memory. The important point is that, when associations are readily and easily brought to mind, this might inflate subjects' estimates of frequency (Fiske and Taylor, 1991). Consequently, it seems likely that the significance of an event may influence the accuracy of judgements because salience may lead subjects to *overestimate* some attribute of an event in general, e.g., its frequency. For example, the visit of a significant customer may lead a manager to overestimate the frequency of customer visits in general.

The above discussion indicates that frequent and irregular behaviours are not easily accessible from episodic memory, which means that the frequency of such behaviours is difficult to recall accurately. In such situations, people tend to rely on estimation strategies to make the best possible assessments. In particular, the sub-conscious application of the availability heuristic seems to be a likely path. This strategy may, however, lead to persistent biases in subjects' perceptions, as both the frequency and significance of certain behaviours may lead to less accurate estimates of the frequency of the same behaviours. The influence of such factors on accuracy in frequency perceptions may, however, vary across managers in a top management team. For example, team members usually have different tasks, and, since they tend to focus on the activities they are involved in, they may often vary in their perception of salience or vividness (cf. Dearborn and Simon, 1958). In addition, team-managers usually occupy roles with varying degrees of contact with different types of external actors and may thus be exposed to partly different information environments. This implies that the types of external actors, and information that are easy to recall may vary across managers in a team. Present insights are, however, modest and make it difficult to advance specific predictions (hypotheses) about the extent to which managers over- or underestimate their frequencies of external information exchanges.

## **Method**

This section reports the research methodology underlying the empirical study aimed at examining the accuracy of managers' perceptions of the frequency of information exchange with strategic network members. We first describe the choice of research design and proceed to describe data sources and measurements.

### *Design of study*

For the purpose of this research we chose to study a top management team with three members. To examine the accuracy of managers' perceptions, an objective standard or measurement is needed (Starbuck and Mezias, 1996) in addition to capturing perceptions of their information exchange behaviours. The study should also include a sufficient number of observations (i.e., information exchanges) to make statistically valid conclusions. To meet these design requirements, we made use of two distinct sets of primary data: A self-report diary in which managers reported their exchanges of information with external actors served as an objective standard, and a questionnaire was used to capture perceptions. In this way, we were able to investigate aspects of both how limited information-processing resources are utilised and the accuracy of perceptions.

### *Setting*

Three members of the top management in one business firm, Alfa, constitute our subjects. Alfa is a medium-sized firm in the Norwegian seafood industry, a turbulent industry in which firms (including Alfa) typically sell low-to-moderately differentiated seafood products in highly competitive global markets. The industry has experienced several shakeouts due to over-capacity caused by sudden drops in fishing quotas (Dreyer and Grønhaug, forthcoming). In spite of turbulent conditions, Alfa's profitability has put it among the top 25% of firms in the filleting branch of the industry for the last three years. Appendixes 1 and 2 show selected characteristics of Alfa and its three top managers.



### *Data collection*

We visited the firm, and explained the purpose of the research to the managers, emphasising its practical usefulness. It was promised that the results and their practical implications would be presented to the firm both in oral presentation and in confidential written reports. The managers at Alfa were enthusiastic and seemed highly motivated to participate. Note that the diary was developed as part of a large research program focusing on organisation development aimed at researching several other issues in addition to those reported here. The research based on the diary served to meet a request from the managers, who wanted to know “How do we spend our time?” and “Can we be more efficient in what we do?” The fact that the research was requested and that several issues were covered, probably explains the high motivation for participating in the research. Their high motivation was important because the filling-in of a diary is a demanding task which requires highly motivated subjects, and because motivated subjects are assumed to be more accurate in their reports (Peterson and Kerin, 1981).

### *The diary*

The aim of the diary was to capture the frequency of the managers’ information exchanges with external actors, which included face-to-face encounters (e.g., customer visits), phone calls, and fax messages. Because managers usually interact with a very large number of different external actors, a classification of external actors into a manageable number of sectors was needed to make the diary. The construction of these sectors was made in close co-operation with the managers. During this stage, the managers were interviewed. These interviews took place very much as conversations, with emphasis on letting the managers play the active role. We were careful not to impose any classification scheme on the managers to ensure that the resulting categories reflected the realities and embeddedness of the firm as perceived by the managers (Grønhaug and Lines, 1995; Starbuck and Mezias, 1996). For example, based on discussions with the managers, other firms in the industry were classified as “other manufacturing firms” rather than “competitors”, as suggested by conventional classification schemes (e.g., Porter, 1980). In total, 11 environmental categories or sectors were constructed. A range of subcategories was also constructed to make it easier for the

managers to find a category for every new actor. These categories and subcategories are shown in Table I.

**Table I. Categories listed in the diary**

<i>Categories</i>	<i>Subcategories</i>
<b>Manufacturing firms</b>	
Interest groups:	-five professional and industrial bodies listed
Suppliers:	-accountants -insurance companies -financial services providers -haulage companies -computer services -providers of additives -providers of production equipment/parts -providers of packaging materials
<b>Raw materials suppliers</b>	
Customers:	-Norwegian customers -Norwegian export companies -foreign customers
<b>Consultancies</b>	
<b>Politicians</b>	
Governmental bodies:	-social security office -employment office -tax office -Directorate of Immigration -Ministry of Fisheries -quality inspection authorities
County administration:	-development program
Municipal administration:	-harbour authorities -city manager -immigration officer
Local community:	-schools -local associations

The diary was presented as a ring leaf file in which each information exchange was to be entered on a separate sheet. The managers were instructed to register each information exchange immediately, or as soon as possible after it had occurred, by means of an “x”. To some extent, this involves perception of one’s own behaviours. But here, managers register the individual external information exchanges without any frequency estimates. Although the

managers may misclassify or overlook some external interactions<sup>1</sup> we believe that frequency estimates based on such data will produce quite accurate accounts of external information exchanges. The firm was visited several times to carefully instruct the managers. A one-day test run of the diary was conducted to sort out any remaining misunderstandings. The log-period lasted 24 consecutive working days, covering five weeks. Altogether, the three managers reported 225 encounters in which information was exchanged with external actors.

### *The questionnaire*

To capture managers' perceptions of their information exchanges with external actors, we used a structured questionnaire. The design of the questionnaire reflected the main environmental sectors used in the diary. One set of questions served to capture managers' perceived frequency of information exchange, i.e.: "How often do you exchange information with 'sector xxx'?" These questions were scored as shown in Appendix 3. To capture the significance of exchanging information with each environmental sector, the managers were asked to report how important it was for them to exchange information with each external sector, i.e.: "How important is it for you to exchange information with 'sector xxx'?" The questions concerning importance were scored on a scale from 1 to 7, where 1 = "no importance at all", and 7 = "very important".

### *Findings*

In this section, we present our findings. We first report how the top management team interacts with various external sectors. We also report the accuracy of the team and the managers' perceptions of the frequency of information exchanges. Then we proceed to report whether and to what extent the frequency and salience of information exchanges influence perception accuracy.

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<sup>1</sup> Two factors might have led managers to overlook interactions. First, in busy periods managers found it difficult to report all information exchanges due to lack of time. Second, the managers were absent for several days, e.g., when visiting customers, attending industry conferences and so on. For practical reasons, the managers did not take the diary on these trips, which means that some days are missing from the diaries.

*Environmental Contact and Perception Accuracy*

Table II reports the perceived and observed frequency of information exchange for the top management team. By looking at the top management team as a whole, we get a good “picture” of its environmental contact. It can be seen that the intensity of external contact varies substantially across environmental sectors. By inspecting the second column, actual frequency, we can see that “suppliers” are by far the sector with which the team has had most contact.

**Table II. The top management team: Perceived and actual frequency of information exchange with external sectors.**

External sector <sup>a</sup>	Perceived frequency/week	Actual frequency/week	Difference <sup>b</sup> (%)
Manufacturing firms	11	5.12	115
Interest groups	3.25	0.44	639
Suppliers	7	16.4	-57
Raw materials suppliers	1.75	2.04	-14
Customers	13	6.4	103
Consultancies	7.75	7.04	10
Politicians	0.75	0.2	275
Gov't. Bodies	2.75	4.2	-35
County adm.	0.5	0.2	150
Municipal adm.	3	0.64	369
Media	0.75	1.32	-43
Local community	3.25	4.36	-25
Mean <sup>c</sup> (SD)	4.56 (4.17)	4.03 (4.61)	153 (189)
Sum	54.75	48.36	13.21

<sup>a</sup> The perceived and actual frequencies of information exchange represent the sum of the three managers' reports.

<sup>b</sup> Difference is computed as: (perceived frequency – observed frequency) x 100/observed frequency.

<sup>c</sup> T-test for difference between perceived and actual frequency of information exchange: not significant.

Table II, reveals that, in most instances, differences between actual and perceived numbers of contacts are substantial. For example, the perceived frequency of information exchange with suppliers is almost 60% less than the observed frequency, while perceived frequency of information exchange with interest groups is more than 600% higher than the observed frequency. Table II also shows that the mean difference between perceived and observed frequencies (calculated from absolute values) is more than 150%!

In order to assess the perceptual accuracy of each individual manager, and the extent to which they differ in their perceptual accuracy, we calculated the percentage differences between perceived and observed numbers of contacts for each manager and each sector. This is reported in Table III.

**Table III. The accuracy of managers' perception of frequency of information exchange with external sectors**

<i>External Sectors</i>	<i>Managers</i>		
	A <sup>a</sup>	B	C
Manufacturing firms	-29	60	733
Interest groups	108	1150	n.a.
Suppliers	-24	-82	-77
Raw materials suppliers	-86	n.a.	150
Customers	525	150	-46
Consultancies	155	-44	-58
Politicians	150	n.a.	0
Gov't. Bodies	-76	-21	0
County adm.	25	n.a.	0
Municipal adm.	n.a.	291	0
Media	-81	n.a.	n.a.
Local community	25	-37	n.a.
Mean <sup>b</sup> (SD)	117 (144)	229 (382)	118 (236)
Sum perceived/actual frequency	16.76/24	21.20/20.75	10/10.40

<sup>b</sup> The measure for accuracy is percentage deviations from actual observations, computed as:  $(\text{perceived frequency} - \text{observed frequency}) \times 100 / \text{observed frequency}$ .

<sup>a</sup> T-test for difference between mean values: not significant.

From Table III, we can see that the individual mean differences for each manager range between 117 and 229%. The average difference between actual and perceived frequency of external information exchange for the management team reported in Table II is 153%. Compared with the means, large differences between the individual managers are observed. Based on the differences between perceived and observed frequencies of contact, we see that the three managers make substantial perceptual errors regarding the frequency of their information exchanges. Inspection across the managers also shows that they both under- and overestimate the frequency of information exchange for the same external sectors. There appears to be little consistency across observations, as estimates vary substantially both across managers and sectors without any clear pattern. The only exception is that “Suppliers” is the

only sector for which all three managers *underestimate* the frequency of information exchange. This finding may, however, be a result of the methodology. As can be seen from Table I, a range of different types of suppliers was listed in the diary, but in the questionnaire, there was only one category to subsume this wide range of actors. This implies that in the questionnaire, “Suppliers” may have been too wide a category and thus it might have been difficult to estimate the extent of information exchange, which probably explains the underestimated frequencies.

*Factors influencing perception accuracy*

In the theoretical discussion, we argued that, since managers in a team will often differ in their environmental focus, they might also differ in their perception of salience as well as in the intensity of their interaction with external actors. Both the frequency and salience of events (i.e., information exchanges) might lead to less accurate perceptions of frequency. To assess the influence of these factors on perception accuracy, we calculated rank correlations between (1) observed frequency and inaccuracy, and (2) perceived importance and inaccuracy. The results of the rank correlations are reported in Table IV.

**Table IV. Correlations (Spearman’s rho) of frequency and importance with inaccuracy**

	<i>Frequency/Inaccuracy (n)</i>	<i>Importance/Inaccuracy (n)</i>
Team	.110 (28)	.420* (28)
Manager A	.057 (11)	.042 (11)
Manager B	-.623 (8)	-.489 (8)
Manager C	.703* (9)	.886** (9)

\*\* =  $p < .01$ , \* =  $p < .05$

Inspection of Table IV shows that rank correlations between frequency and inaccuracy are positive for the team and for two of the team members, indicating that, as frequency increases, perceptions become less accurate. However, the results are not statistically significant (except for Manager C). Table IV also shows that the rank correlation between importance and inaccuracy is positive, both for the team and for two of the managers. This indicates that, as importance increases, perceptions become less accurate. Results are statistically significant for the team and for Manager C. The results correspond, to some extent, with our theoretical

assumptions that significant/frequent events may lead to erroneous perceptions. However, inspection of Table IV shows that managers B and C display opposite tendencies. This is an intriguing finding. But, unfortunately, the present data does not allow us to examine this result in more detail.

## **Discussion**

Information exchanges with external actors are a crucial dimension of managers' and firms' strategic network activities (Gulati *et al.*, 2000). Because managers and firms have limited informational capacity, accurate network perceptions are needed to fully exploit their information-processing resources and to network as required. Our findings show that the three managers studied here make substantial perceptual errors, and that they both under- and overestimate their intensity of information exchanges with strategic network members. The results also show that accuracy of perception may both increase and decrease when both the frequency of information exchanges increases, and when information exchange is perceived as important.

In spite of rather inaccurate managerial perceptions about their strategic networks, Alfa performs well in a highly competitive and rapidly changing environment. This indicates that Alfa's top management has been able to adapt the firm to significant environmental changes. How can this apparent paradox be explained? A possible explanation is that, when faced with important strategic decisions, managers carefully discuss the various issues involved. In this way they are likely to calibrate their environmental perceptions, which might lead to improved accuracy. Another explanation might be that slack resources insulate the firm and its managers from harsh consequences (Starbuck and Mezias, 1996). Finally, our dependent variable (firm performance) might have been too coarse-grained to capture the effects (if any) of inaccurate network perceptions measured against a 24-day standard (i.e., the diary). Accordingly, the fact that Alfa performs well in spite of managerial misperceptions about their networking intensity should not be interpreted as meaning that managers might get away with inaccurate perceptions.

Our focus on the accuracy of managers' perceptions of the frequencies of their own behaviour is relevant since researchers often ask managers, or other organisation members, to report frequencies of behaviour, e.g., numbers of hours worked, meetings, interruptions and contacts. They are asked to report these behaviours to indicate how they use their time, to

indicate importance, or to capture some other relevant aspects of their behaviour. Perceptions of frequencies are also used to develop and/or test theories about managers and/or the behaviour of their organisations. For example, a common way of measuring organisations' environmental scanning is to ask boundary-spanning personnel to report how often they receive certain types of external information (see, e.g., Aguilar, 1967; Hambrick, 1982). It is also common among network researchers to measure various dimensions of actors' networks by means of perceptual measures of frequency behaviour. For example, tie strength has typically been measured by a single item asking respondents to report the intensity of interaction with external actors (see, e.g., Granovetter, 1973). The reported findings show that actors can make substantial errors when reporting the frequency of their own behaviour, indicating that such measures can be a serious threat to the reliability and validity of conclusions drawn from such data. In line with Bernard *et al.* (1981), we recommend that the quality of network measurement must be improved. This argument should, however, be balanced against whether one seeks to measure actually existing networks, or networks as perceived by the actors involved. Clearly, the appropriate measurements should differ according to the research problems at hand (Marsden, 1990). For example, accurate knowledge of actually existing networks is needed to study how network structure influences access to information and should thus be subject to the cautions raised above. On the other hand, researching actors' network perceptions and their effect on behaviour, requires *perceptual* data because perceptions, rather than objective characteristics of the environment, form the basis for decisions and actions (cf. Weick, 1979).

Our results also have practical implications. The managers studied here have rather inaccurate knowledge of the frequency of their own behaviour. This is, however, not surprising since people seldom or never get the kind of feedback they need to adjust their perception of frequency behaviour (and a range of other behaviours). This implies that managers should consider carefully the possibility of erroneous perceptions and the potential cognitive biases caused by the frequency and perceived significance of behaviours.



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## Appendix 1. Some firm characteristics

Established	1939
Turnover	1998: 102 NOK mill
Profitability (ROI)	1998: 6.9% 1997: 13.7% 1996: 9.9%
Products	Alfa produce two main types of frozen seafood products from whitefish species (cod, haddock and saithe): (1) Speciality products (various types of cuts from fish fillet) and (2) Commodities (fish fillet and cuts from fish production, which are mixed and frozen into a standardised fish block). The fish block is used by Alfa's customers in secondary processing, in production of fish fingers and other value-added frozen seafood products.
Customers	Speciality products mainly sold through Norwegian and Danish wholesalers. Other products (with less value added) are mainly sold to large customers in the UK, France and Germany. In 1997, the five largest customers bought 79% of Alfa's total sales.
Top management team	General manager, second-in-command, sales and production manager
Other staff and workers	Alfa has 5 administrative staff and 5 middle managers responsible for various aspects of production, and employs some 130 workers in production.

## Appendix 2. Managerial characteristics and tasks

General Manager (Manager A)	<p><i>Age:</i> 60 years.</p> <p><i>Education and work experience:</i> two years of business administration. Took over the company after his father and has been general manager for the last 28 years.</p> <p><i>Main tasks and responsibilities:</i> Runs the company. Alfa's main contact with its largest customers and suppliers. This contact involves negotiations and contracts. Holds board positions in industrial bodies and one large investment firm.</p>
Second-in-Command (Manager B)	<p><i>Age:</i> 32 years.</p> <p><i>Education and work experience:</i> Master of Management. Worked for four years in governmental agencies. Has been part of the top management team for three years.</p> <p><i>Main tasks and responsibilities:</i> Organisational development. Alfa's main contact with governmental agencies. Also engaged in various joint projects with local firms. Board member in two local firms.</p>
Sales and Production Manager (Manager C)	<p><i>Age:</i> 34 years.</p> <p><i>Education and work experience:</i> MSc in Fisheries. Has been part of the top management team for eight years.</p> <p><i>Main tasks and responsibilities:</i> Purchasing, production, sales and information technology. Takes care of the implementation of customer contracts and sells Alfa's commodity products (frozen fish block). The sales and production manager is the main link between customers and production. Also engaged in various joint projects with local firms.</p>

**Appendix 3. Scores and transformation for frequency of information exchange**

<i>Scores: Frequency of contact</i>	<i>Transformation to frequency per week</i>
Never	0
Once a month	0.25
2–3 times a month	0.5
Once a week	1
2–3 times a week	2.5
Once a day	5
Several times a day	10





# **Paper VI: Benefiting from Commissioned Research: The Role of Researcher – Client Cooperation\***

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# **Benefiting from Commissioned Research: The Role of Researcher – Client Cooperation**

Geir Grundvåg Ottesen  
Kjell Grønhaug  
and  
Oddrun Johnsen

## **Abstract**

This paper discusses why commissioned research often is neglected and misunderstood, as well as how its use can be enhanced. We argue that the lack of use of such research can be attributed to differences in researchers' and practitioners' knowledge and expectations regarding research problems, solutions, interpretations, and applications. Two hypotheses are proposed, which link the use of research to cooperation between researchers and users during the production of the research, and to qualified assistance in interpreting and applying the research results. The hypotheses were tested on a sample of 65 buyers of 86 research projects in the seafood industry. The reported findings reveal that collaboration foster research utilisation, but also that close cooperation between the providers and the users of research may substitute qualified assistance in enhancing research utilisation.

*Key Words:* Research, utilisation, and cooperation

## **Introduction**

Firms embedded in everchanging and hostile environments need continuously to acquire and utilise timely and relevant information to discover and take advantage of opportunities, and to avoid threats that may arise. Firms may learn about their surrounding environment in a variety of ways. For example, through interactions with customers and other constituencies, firms may come across relevant information. Organisations and their management can also observe and reflect over the outcomes of their own decisions and activities, and thus they can learn by “trial and error”, even though such learning can be imperfect (Levinthal & March 1993). They may also learn from the observation of competitors, as dealt with in the extensive literature on imitation and mimetic processes (see e.g., Galaskiewicz & Wasserman 1989; Haveman 1993).

The importance of firms' ability to learn has been emphasised in the research literature. For example, the literature on market orientation primarily reflects that by focusing on customers and other important constituencies, firms may acquire information which makes it possible to survive and prosper (see e.g., Kohli & Jaworski 1990; Slater & Narver 1995).

In addition to getting insights through interactions, observations, imitations and trial and errors, organisations may also gain insights in a more systematic fashion by conducting research. Research is often carried out in order to answer and shed light on specific problems. The research is commonly organised and conducted as projects, i.e. specific tasks to be solved within a given time and resource frame. Firms often outsource their research tasks due to limited time and resources or the lack of research competence.

Commissioned research is costly, but may produce timely, relevant and highly reliable information. Thus, buyers of commissioned research should be highly motivated to utilise the acquired information. It is however a common observation that commissioned research frequently is neglected, misused or not understood at all (see e.g., Caplan et al. 1975; Deshpandé & Zaltman 1983; Grønhaug & Haukedal 1997; Knorr 1977).

The purpose of the present study is to enhance our insights regarding the use of commissioned research. In so doing, we draw on insights from cognitive psychology to argue that researchers and users often differ in their knowledge of and expectations to research, which may lead to the production of less useful research and/or impair its utilisation. Furthermore, we argue that collaboration between researchers and users during the production of research will enhance both researchers' and users' understanding of the research context and of central concepts involved, as well as calibrating expectations about the outcome of the research. This serves to reduce the "gap" in understanding and expectations between researchers and users, and is thus expected to lead to the production of more useful research, and to enhanced utilisation of the research. We also suggest that if the research providers' assist in interpreting and applying the research findings, this will enhance its use.

The topic of research use has been investigated before. For example, several studies of research utilisation and knowledge transfer in public policy making processes have shown that information generated through research has had little influence on decisions and seems to be underutilised (Deshpandé & Zaltman 1983). Within marketing, a range of studies has investigated marketing managers' use of research (e.g., Deshpandé & Zaltman 1982; Deshpandé & Zaltman 1984; Lee et al. 1987). An interesting finding in some of the earlier studies was that marketing managers reported that much of the research they received was not applicable or sufficiently convincing to be used in critical decisions (Lee et al. 1987). Other

studies within marketing have focused on factors that might influence the use of marketing research. For example, Deshpandé and Zaltman (1982) in a study of brand managers, found that the more decentralised the organisation was, the greater the tendency was to use market research in decision making. Other studies have identified trust between providers and users of market research as an important factor affecting the use of research (Moorman et al. 1992; Zaltman & Moorman 1988). It should also be noted that action researchers, which work closely with organisations which go through some planned change, have long advocated collaboration between researchers and users to enhance research utilisation (e.g., Eden & Huxham 1996; Elden & Chisholm 1993). However, there has been little systematic examination of the effect of collaboration and assistance when the researcher is not playing an action-oriented interventionist role (Mohrman et al. 2001).

The remainder of the paper is organised as follows: In the next section, we explain the theoretical rationale underlying our hypotheses. We then describe our research, a survey-based study of the buyers of commissioned research from a national research institute which serves a wide range of actors in the seafood industry. Then we report our findings, draw conclusions, and highlight their implications.

### **From Research Data to Knowledge Use**

Why is it apparently so difficult to make use of commissioned research? There are probably many answers to this intricate question. Our approach begins with the important distinction between data and information (or knowledge) proposed by Daft and Macintosh (1981). According to these scholars, information is data that changes how one understands the external world, i.e.: “To qualify as information, the data must effect a change in the individual’s understanding of reality” (p.210). This implies that for data (e.g. a research report) to become information it must be interpreted and understood, and it must be new to the user. How then do people interpret data? The answer to this question is closely related to how individuals, often subconsciously, develop and apply mental models, i.e. mentally constructed “road maps” of what works and how to act (cf. Johnson-Laird 1983). Mental models consist of interrelated categories or concepts that help managers, and others, to organise and process information effectively. This is so because mental models give focus, direct people’s attention and thus contribute to what and how they perceive the external world. This relates to cognitive processes involved in categorisation, i.e. basic cognitive

activities related to conceptualisation and understanding (Rosch 1978). Categorisation influences the noticing and interpretation of data as well as what data are noted and how it is structured. An important point is that actors' categories mainly develop through interactions with their environment (Rosch et al. 1976). This means that, over time, mental models and the inherent concepts become more or less suited to the context in which the actor is embedded and operate (Day & Nedungadi 1994; Rosch 1978). Because researchers and practitioners operate in partly different environments, their mental models and inherent concepts are likely to differ, which implies that they may interpret and understand "reality" differently. For example, researchers' understanding of concepts may only partly overlap with how practitioners understand the same concept. Consider for instance the concept of "market orientation". Whereas researchers probably adopt their understanding of that concept from the research literature (e.g. the definition of market orientation provided by Kohli & Jaworski 1990), research findings indicate that practitioners develop their personal understanding of this concept to fit the realities of their competitive context (Ottesen & Grønhaug 2001). This indicates that practitioners' understanding of "market orientation" is likely to deviate from that of the researcher. Thus, if the researcher makes recommendations, without explicating them in detail, e.g. "to increase profitability – become more market-oriented", then the practitioner may implement such advice in a different manner than intended, or s/he may neglect the advice because it is not understood. This indicates that careful coding of research data might be necessary to make it available to users. However, to carry out such coding the researcher must have a very good understanding of the user and his or her context and research requirements.

Differences in thinking and understanding between researchers and practitioners give rise to other types of misunderstandings as well. For example, they may perceive research problems and solutions differently (Andreasen 1985). They may also differ in their understanding of what constitutes new (or useful) knowledge. Whereas a researcher might value basic or conceptual research that display theoretical and methodological rigor, a practitioner might value applicable or instrumental knowledge as more useful. Such differences in understanding and expectations between researchers and practitioners may prevent researchers from understanding and appreciating what constitutes useful commissioned research. This in turn, may lead to the production of trivial or irrelevant research, which will not be considered new (useful) by the user and will thus not be applied.

Researchers and practitioners are experts in their domains. To become true experts individuals must go through extensive training and learning. This often lasts more than 10

years (Simon 1991). Because researchers and practitioners operate in partly different environments, with partly different demands (e.g. in terms of required skills and knowledge), they are likely to differ in terms of their area of knowledge (expertise). An important area in which they are likely to differ is in their ability to conduct, evaluate and understand research (Lee et al. 1987). Whereas such skills are at the heart of researchers' expertise, practitioners can not be expected to have the same skills and knowledge. This is easy to understand because practitioners need to spend their limited time and capacity on a variety of other tasks, and they lack the necessary education and training. Thus, practitioners may find it difficult to comprehend research findings presented to them. On the other hand, researchers might not have sufficient knowledge about the users, i.e. about their context and expectations to the research, and how they will utilise the research.

Another relevant point related to differences in knowledge between researchers and practitioners is that buyers of commissioned research may lack the ability to formulate precise and manageable research questions and thus to request timely and relevant research. One reason for this is a lack of training and education, as noted above. Another reason is that research results can be characterised as “experience goods”, which means that the outcome is experienced *after* the research has been conducted (cf. Nelson 1970). It should also be noted that the firm's knowledge of and expectations to how it may benefit from the research might be unclear. For example, at the outset, firms may hold naive and unrealistic expectations regarding the outcome of the research, which may result in dissatisfaction with the research supplier and the outcome of the research.

The above discussion indicates that a difference in knowledge and expectations between researchers and practitioners may lead to the production of less useful research and/or impair the utilisation of research. We therefore suggest that reducing the “gap” in knowledge and expectations between researchers and users may lead to the production of more relevant research, which can be understood and used by practitioners. More specifically, researchers and practitioners may benefit from developing a shared understanding of the research context, the research problems/tasks, the meaning of central concepts involved, as well as their expectations to the research (Andreasen 1985; Deshpandé & Zaltman 1984; Grønhaug & Haukedal 1997). How can this be accomplished, if at all? Insights from the literature on teams and group decision-making show that when people interact socially with each other, their views and insights become more similar (see e.g., Bettenhausen & Murnighan 1985; Chattopadhyay et al. 1999; Geletkanycz & Hambrick 1997). This build on the observation that social interaction leads to conformity in perspectives. It is thus expected

that communication and interaction about a particular research task may help clarify the many issues discussed above, which may lead to the production of useful research that is likely to be utilised by the buyer of commissioned research.

Commissioned research implies conducting a specific research task. The work often results in a research report. To become useful, i.e. to serve as valuable input for further actions, the report must be read and understood. However, the buyers of research often have a rather limited ability to read, understand, and make use of research reports. In such cases, qualified assistance in interpreting and making use of the reported research may be useful. Through explanations from and discussions with the researcher, the buyer of the research may gradually gain new insights which enables him or her to change their present thinking about an issue and thereby to benefit from the contracted research. Based on the above discussion we suggest two hypotheses, i.e.:

Hypothesis 1: The degree of cooperation between research providers and users co-vary positively with the utilisation of commissioned research.

Hypothesis 2: Qualified assistance in interpreting and applying the research results co-vary positively with its use.

## **Research Methodology**

In this section, we describe the research setting, data collection and the measures used to test our research hypotheses.

### *Research Setting and Data Collection*

The empirical setting chosen is the buyers of commissioned research from a national research institute operating in the Norwegian seafood industry. The research institute serves a wide range of different types of actors, which include manufacturing firms, trade organisations, and governmental bodies. It has some 80 researchers working in such diverse disciplines as marketing, economics, production technology, and biotechnology. This diversity is reflected in the types of research projects included in the present study.

Included in the study were the buyers of research projects which were completed during the years 1999 and 2000. These include 113 projects conducted for 80 organisations.

Due to a lack of secondary data, we collected primary data by means of a questionnaire. The questionnaire was sent to the person who had been in charge of the project in the buyer organisation. After two phone calls to those organisations which did not return the questionnaire, 65 organisations had responded (81% of the total number of organisations), representing 86 research projects (76% of the total number of projects). The responding organisations were relatively small. Some 75% of the organisations had less than 100 employees. The average turnover is 538 million NOK (58 mill US\$). The 65 responding organisations represent different types of organisations: 61.5% are business firms, 18.5% are governmental bodies, 7.7% are research institutions and 6.2% are trade organisations. The remaining 6.2% are other types of organisations.

### *Measurement*

The constructs included in this study are research use (USE), cooperation (COOP), and assistance (ASSIST). Although much has been written about research use, no standardised measures for the constructs employed here have been developed so far. Thus, we had to construct appropriate measures for our study. In this process, we relied heavily on the relevant research literature to see how other researchers had defined the same or similar constructs. In line with Churchill's (1979) procedure for measurement development, we first specify the domain of each construct. We then proceed to describe how we generated valid and reliable measures to capture the theoretical constructs as specified.

*Research use:* A review of the literature on research use revealed great diversity in the way research use has been defined and measured (Menon & Varadarajan 1992). Thus, a standard definition of research use does not appear to exist (Menon & Varadarajan 1992; Moorman et al. 1992). In the present study, we focus on the *impact* dimension of the research, i.e., whether the completed research influences the users' thinking, decisions and actions (cf. Deshpandé 1982; Dunn 1986). Furthermore, we emphasise that research use can be both of a conceptual and instrumental type. Instrumental use refers to the direct application of research results to solve a specific problem or to guide concrete decisions and actions (Caplan et al. 1975). Conceptual use involves using research results for "general enlightenment" (Beyer & Trice 1982, p.598), i.e. research information that changes the user's knowledge without being applied directly for specific decisions and actions.

*Cooperation:* Regarding the construct of "cooperation", we emphasise the importance of interactions and involvement during the project. We also focus on the ability of the

research provider to solve problems and challenges which emerge during the project. We focus on personal communication because it makes it possible to immediately to clarify and elaborate unclear issues, and to discover possible differences in interpretations (Daft & Weick 1984). More specifically, we emphasise the extent to which the researcher and user has an ongoing dialog during the project, as well as the availability of the research provider's project managers during the project.

*Assistance:* Regarding assistance, we focus on researchers' assistance in interpreting the results and clarifying their significance for the user's organisation, as well as how the results could be applied.

To measure these constructs, we developed a pool of items that seems to reflect the theoretical constructs. In addition to examining previous research, we made use of the authors' extensive experience as providers of commissioned research in our effort to formulate items that reflect the specified domain for each of the theoretical constructs. The items were pretested on eight researchers with extensive experience with commissioned research. After this procedure, we ended up with 12 items which are assumed to measure the constructs included, i.e., 4 items which reflect research use, 5 items which reflect cooperation, and 3 items which reflect assistance. These items are shown in Appendix 1. All items were rated on a 7-point Likert scale with end-points 1 = "strongly disagree" and 7 = "strongly agree". Each measure was arrived at by dividing the sum of the scores for each item by the number of items included in the measure. The reliability of the scales for the measures were found to meet Nunnally's (1978) recommendations, as the Chronbach's alfa ( $\alpha$ ) exceeded 0.70 for all of the constructs (presented in Appendix I).

To determine the dimensionality underlying these measures, we used exploratory factor analysis on the items which are assumed to reflect each measure (cf. Churchill 1979). Exploratory factor analysis was applied due to a lack of prior testing of the measures. This procedure showed that two of the measures, i.e. cooperation and assistance, displayed a unidimensional structure, representing 73% and 87% of the variance in the items, respectively (see Appendixes 2 and 3). Our measure of research use displayed a two-factor solution reflecting instrumental and conceptual research use (see Appendix 4). However, in estimating the discriminant validity for the three measures (with the cut-off point eigenvalue = 1), as discussed below, a clear three-factor solution emerged. Thus, we decided to consider USE a one-dimensional construct. An examination of the correlation coefficients between the items included in the USE-measure showed that they all were positive and high, and that the intercorrelations also were higher than correlations with indicators which measure the other



constructs. Thus according to the idea of M(ulti) T(raits) M(ulti) M(ethods), (see, Campbell & Fiske 1959) our choice seems appropriate.

To determine whether the measures reflected distinct constructs we conducted a factor analysis using varimax rotation on the 12 items that represent the three constructs in the research model (cf. Churchill 1979). Table 1 reports communalities, factor loadings, variance explained, and eigenvalues for the measures.

**Table 1. Assessment of Discriminant Validity for the Measures**

Items: (for description of items, see Appendix 1)	Communalities	Factor 1: COOP	Factor 2: ASSIST	Factor 3: USE
COOP1	.795	<b>.873</b>	.052	.176
COOP2	.662	<b>.796</b>	.169	-.010
COOP3	.676	<b>.792</b>	.088	.205
COOP4	.701	<b>.773</b>	.091	.309
COOP5	.780	<b>.714</b>	.395	.340
ASSIST1	.905	.060	<b>.938</b>	-.147
ASSIST2	.839	.080	<b>.912</b>	-.012
ASSIST3	.725	.294	<b>.799</b>	-.010
USE1	.660	.170	-.115	<b>.786</b>
USE2	.664	.062	-.249	<b>.774</b>
USE3	.607	.369	.167	<b>.666</b>
USE4	.405	.211	.388	<b>.458</b>
Variance explained	-	39.4%	21.2%	9.6%
Eigen Values	-	4.73	2.55	1.15

Exploratory factor analysis with varimax rotation. Three-factor solution with cut-off point at eigenvalue = 1.

Table 1 shows that with a cut-off point at eigenvalue = 1, the factor analysis extracted three factors. Factor 1 represents cooperation (COOP), factor 2 assistance (ASSIST), and factor 3 research use (USE). The three factors represent 70% of the variance in the 12 items. We see that all factor loadings are greater than 0.47 and that all cross-construct loadings are smaller than the corresponding own-construct loading. Jointly these facts indicate that the three measures are sufficiently distinct.

## Results

In this section, we report the findings of our study. Table 2 provides some descriptive statistics as well as correlation coefficients between the measures.

**Table 2. Descriptive Statistics and Correlation Coefficients for the Measures**

	N	Mean (SD)	1.	2.	3.
1. USE	52	4.70 (1.22)	1.00		
2. COOP	72	5.70 (1.15)	.516**	1.00	
3. ASSIST	59	4.73 (1.34)	.075	.493**	1.00

\*\* =  $p < .01$

Table 2 shows that the two independent measures are positively correlated ( $r = 0.493$ ,  $p < .01$ ) and thus collinearity problems may exist. Tests for collinearity revealed that the tolerance measures ( $< 0.815$ ) and VIF-values ( $< 1.228$ ) for the two independent measures were well below the threshold values recommended by Hair et al. (1998). Therefore, collinearity appears not to be a serious problem here.

To test the two hypotheses, regression analysis was applied to estimate the effects of cooperation (COOP) and assistance (ASSIST) on research use (USE). The result of the regression analysis is shown in Table 3.

**Table 3. Regression Analysis: Dependent Variable: Research Use (USE)**

	Stand. $\beta$ (t-values)
COOP	.556 (3.827)***
ASSIST	-.149 (-1.009)
	$R^2 = 0.260$ **

\*\* =  $p < .01$ , \*\*\* =  $p < .001$ ,  $n = 45$

Table 3 shows that the regression model explained 26% of the variance in the dependent variable ( $p < 0.01$ ). The data here also shows that H1 is supported, i.e. that the degree of cooperation between research providers and users co-varies positively with the use of commissioned research. Furthermore, Table 3 shows that H2 is not supported, i.e. that qualified assistance in interpreting and applying the research results does not co-vary with its use. The latter finding is surprising and against our theoretical arguments. We elaborate and discuss this at more detail in the next section.

## Discussion

In the theoretical discussion at the beginning of this article, we argued that researchers and users of research are likely to differ in their knowledge of and expectations to (commissioned) research. We also maintained that this “gap” might lead to the production of irrelevant research and/or impair the utilisation of research. Empirical support was found for the argument that cooperation during the production of the research enhances its use. Our results did, however, not support the argument that researchers’ assistance in interpreting and applying the research results enhances its use. Because this was a rather surprising result, we carefully reconsidered our approach, including the measures and how they relate to each other. More specifically, we went back to our original USE measure and examined how its two components, i.e. instrumental (INSTUSE) and conceptual (CONUSE) use (see Appendix 4), relate to our measures of cooperation and assistance. In Table 4, we report the correlation coefficients between these measures.

**Table 4. Descriptive Statistics, and Correlation Coefficients for the Measures**

	N	Mean (SD)	1.	2.	3.	4.
1. INSTUSE	55	3.67 (1.72)	1.00			
2. CONUSE	72	5.67 (1.16)	.407**	1.00		
3. COOP	72	5.70 (1.15)	.336*	.511***	1.00	
4. ASSIST	55	4.73 (1.34)	-.147	.287*	.493***	1.00

\* =  $p < .05$ , \*\* =  $p < .01$ , \*\*\* =  $p < .001$

The correlation matrix presented in Table 4 reveals that cooperation correlates positively with both instrumental and conceptual research uses. We also see that assistance is negatively related to instrumental use, though the results are not statistically significant. In sum, this indicates that assistance is less important to well-understood and “clear-cut” use, but also that cooperation enhances (instrumental knowledge) use and may make subsequent assistance unnecessary. To test whether cooperation may substitute assistance, we computed the partial correlation coefficient between instrumental use and assistance, controlling for the effect of cooperation on instrumental use. The partial correlation between instrumental use and assistance, controlling for cooperation, is negative, i.e.  $r_{INSTUSE, ASSIST \cdot COOP} = -.3025$  ( $p < .05$ ). Compared to the zero-order correlation between instrumental research use and assistance (cf. Table 4), the partial correlation coefficient is larger. This supports our above argument and suggests that cooperation may substitute subsequent assistance. The finding can be explained as follows: Through cooperation during the production of research, users may acquire the

insights which are needed in order to understand and apply the final research results. Through cooperation during the production of the research, users also have the possibility to influence the research itself and thus make it more useful – which should enhance its use. Jointly these factors may explain why subsequent assistance in understanding and applying the research results might be unnecessary.

What about conceptual use – is assistance necessary? The partial correlation between conceptual use and assistance controlled for cooperation, is rather small, i.e.  $r_{\text{CONUSE}, \text{ASSIST. COOP}} = .0652$  (not significant), and substantially smaller than the zero-order correlation between conceptual use and assistance, i.e.  $r = .287$  (cf. Table 4). The large reduction in the correlation coefficient between the two measures indicates that cooperation may reduce the need for assistance also when it concerns the use of conceptual research. Another interesting finding is that the negative partial correlation between instrumental use and assistance ( $-.3025$ ,  $p < .05$ ), compared to the weak positive partial correlation between conceptual use and assistance ( $.0652$ , not significant), indicates that conceptual research use is perceived as more demanding by the user.

### *Implications*

Our study provides empirical support for the often assumed, but little examined assumption that cooperation during the production of the research enhances its use. The practical implication of this finding is that both researchers and buyers of research projects should try to organise their relationship in a manner which facilitates all necessary cooperation in commissioned research. Note that this includes a constant personal dialog, which serves to focus the research effort and to clarify and elaborate ambiguous issues. Cooperation also includes researchers' accessibility and active involvement in the project, as well as the effective handling of problems and challenges that typically emerge during a project.

An additional and important contribution of the present study is the finding that cooperation may *substitute* assistance in enhancing research use. This finding is new and has several interesting practical implications. First, when the cooperation between researchers and users has worked well, subsequent assistance may be superfluous. Second, if cooperation during the production of the research, for some reason or other, was insufficient, subsequent assistance may – to some extent – compensate for the lack of cooperation. It should, however, be noted that because assistance occurs *after* the research has been produced, it can *not* help improve the usefulness of the research, as can cooperation. Thus, the research provider should

not focus on assistance as a pure substitute for cooperation; rather, assistance can be very useful when cooperation – for some reason – is insufficient or fails. In terms of providing qualified assistance, two factors should be emphasised. First, highly qualified personnel should be readily available for the buyer of the research. Second, researchers providing assistance must, in addition to research competence, have sufficient knowledge of the research user and his or her context and requirements.

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### Appendix I. Description of Items for the Constructs

Constructs:	Items:
COOP $\alpha = 0.90$	<ul style="list-style-type: none"> <li>We had an ongoing dialog with Alfa during the project</li> <li>It was easy to get in contact with Alfa's manager for the current project</li> <li>The cooperation between Alfa and ourselves worked well during the project</li> <li>Alfa actively contacted us to follow up on the project</li> <li>Alfa's employees showed a good ability to solve different problems and challenges that emerged during the project</li> </ul>
ASSIST $\alpha = 0.92$	<ul style="list-style-type: none"> <li>Alfa's researchers helped us understand the significance of the results for our company</li> <li>Alfa's researchers helped us understand how the results from the project could be applied by our company</li> <li>Alfa's researchers helped us interpret the results from the project</li> </ul>
USE $\alpha = 0.72$	<ul style="list-style-type: none"> <li>The results from the project have led to concrete changes in our company</li> <li>Through the project we have enhanced our competitiveness</li> <li>The results from the project make an important basis for our decisions</li> <li>The results from the project have enhanced our insights into the relevant domain</li> </ul>

### Appendix 2. Assessment of Unidimensionality: COOP

Items: (for description of items, see Appendix 1)	Communalities	COOP
COOP1	.782	.885
COOP2	.692	.832
COOP3	.687	.829
COOP4	.718	.847
COOP5	.756	.869
Variance explained	-	72.7%
Eigenvalue	-	3.64

Exploratory factor analysis with varimax rotation. One-factor solution with cut-off point at eigenvalue = 1.

### Appendix 3. Assessment of Unidimensionality: ASSIST

Items: (for description of items, see Appendix 1)	Communalities	ASSIST
ASSIST1	.919	.959
ASSIST2	.897	.947
ASSIST3	.790	.889
Variance explained	-	86.9%
Eigenvalue	-	2.61

Exploratory factor analysis with varimax rotation. One-factor solution with cut-off point at eigenvalue = 1.



#### Appendix 4. Assessment of Unidimensionality: USE

Items: (for description of items, see Appendix 1)	Communalities	Factor 1: INSTUSE	Factor 2: CONUSE
USE1	.772	<b>.848</b>	.230
USE2	.820	<b>.905</b>	.004
USE3	.718	.467	<b>.707</b>
USE4	.868	.000	<b>.932</b>
Variance explained	-	43.9%	35.6%
Eigenvalues	-	2.17	1.00

Exploratory factor analysis with varimax rotation. Two-factor solution with cut-off point at eigenvalue = 1.



## **PART III**



## Main Findings

The present work has focused on three main issues, i.e.:

1. How managers understand the market orientation concept
2. How a market orientation is conceptualised and practised by firms operating in (a) turbulent supply environments and (b) highly competitive “perfect” markets
3. How firms can enhance their knowledge in order to compensate for their limited informational capacity

The thesis provides six separate studies, each of which offers insights into one or more of these issues. The main findings are summarised below, in accordance with the research outlined above.

### *Managers’ understanding of market orientation*

Three of the papers (i.e. papers I, II and IV) provide insights into the question: “How do managers understand the term ‘market orientation’”? The findings revealed that all the managers interviewed were familiar with the term “market orientation”, and that they had developed a rather fine-grained and elaborate understanding of it, including both influencing factors and the consequences of market orientation. Findings also show that the managers relate market orientation to their firms’ performance, which indicates that it relates to their goal-directed efforts to perform well and should thus influence their thinking and behaviour. Furthermore, findings revealed that the managers differed in their understanding of market orientation, even when embedded in the same firm (paper IV). It was also evident that their understanding partly differed from the intentions of the theoretical construct as advocated in the research literature (see e.g. Kohli and Jaworski, 1990; Narver and Slater, 1990). A major conclusion of papers I, II and IV is that the managers had created an understanding of market orientation that reflected the context in which they were embedded and operated.

### *Market orientation under conditions of turbulent supply*

At the outset of the thesis, it was argued that the market orientation construct provides little insights into how a market orientation can be practised when firms face highly turbulent supply conditions. Paper II focuses specifically on this issue. Here, a quasi-experimental approach was applied to examine whether and, if so, how uncertain supply influenced firms' market orientation. This was done by selecting firms from two industry branches so that one group was exposed to the "treatment" (i.e. uncertain supply) while the other group was not. Thus, it was possible to "isolate" the effect (if any) of uncertain supply on firms' market-oriented thinking and behaviour. The findings of this study revealed that when supply is uncertain it is of utmost concern and considered a key determinant in satisfying the firms' target markets. An important finding of study II is that, when exposed to uncertain supplies, 9 out of 10 managers subsume "supply" in their understanding of market orientation, and in a setting with low supply uncertainty, only 3 out of 10 managers did the same. This observation provides strong support for the conclusion that when supply is uncertain it is a critical element of firms' market orientation. In this context, this makes perfect sense because in order to satisfy customers and earn profits, firms must be able to secure adequate and timely supplies of vital input factors. Paper III examines in detail the strategies firms use to secure necessary inputs when exposed to high supply uncertainty. Findings revealed that a multitude of strategies are applied and that none of these can eliminate the problems related to uncertain supply.

### *Market orientation in highly competitive, close to "perfect" markets*

In the introduction, the market orientation construct was also criticised as being less relevant for firms operating in highly competitive markets. It was argued that the strong focus on individual competitors in the theoretical construct (see e.g. Narver and Slater, 1990) might be of less value in highly competitive markets where the behaviour of the *individual* competitor is of little or no importance. How then is market orientation conceived and practised by firms operating in highly competitive markets? Paper II reveals some interesting findings regarding this issue. For example, only two out of the twenty managers studied here associated individual competitors with market orientation. This observation departs from the perspective on market orientation as typically reflected in the research literature (see e.g. Narver and Slater, 1990). It should also be noted that the majority of the managers emphasised the crucial

importance of information about market prices and conditions affecting prices, i.e. supply and demand. Thus when firms operate in highly competitive markets it is more important for them to understand how different “markets” behave in terms of supply and demand fluctuations than it is to understand the behaviour of individual competitors, which was reflected in their conceptualisation of market orientation.

### *Knowledge enhancing activities*

In the introduction, the market orientation literature was criticised as being overly optimistic with regard to firms’ ability to (actively) collect and exploit market information. Papers V and VI elaborate and extend this criticism. In paper V, it is shown that managers make substantial perceptual errors regarding their strategic networks, which restrict their ability to adjust their positions, and utilise their limited time and capacity to exchange relevant information with external actors. Paper VI reviews the empirical literature and finds that buyers of commissioned research (e.g. business firms) tend to misunderstand or neglect the information acquired. The paper provides a range of theoretical arguments as to why this may be the case, all of which relate to limitations in practitioners’ knowledge (note that researchers’ knowledge limitations also play a crucial role here – as is discussed in more detail below).

How then can firms enhance their knowledge and thus compensate, at least to some extent, for their restricted informational capacity? Papers IV, V and VI shed light on this important question, as follows: Paper IV examines how firms may enhance their access to information and understanding by affording the benefits of a top management team. The paper focuses on how the sharing *and* deviation in mental models of market orientation can lead to synergistic effects in information processing. The paper challenges an often implicit assumption found in the market orientation literature, i.e. that the relationship between sharing market-oriented beliefs and values among organisation members is positive and linear. A comparison of mental models of market orientation across the three members of a well-functioning top management team showed large diversity in focus, as only three out of seven categories were shared by all three team members. This large diversity was to some extent surprising because the conditions for shared cognition seemed “optimal” in a team that had worked closely together for several years. It was observed that the three managers studied “agreed” with regard to the most important category (i.e. customers). Together with the team members’ *complementary* focus, this probably results in a more comprehensive collection and interpretation of information and provides a foundation for a consistent pattern of thinking

and activity. Good company performance indicates this, i.e. that the focus of the top management team, and thus what they have paid attention to and emphasised, has had a positive impact on the firm's choice of actions (cf. Hambrick and Mason, 1984).

Paper V demonstrates, as noted above, that the adequate exploitation of strategic networks is restricted by inaccurate environmental perceptions. In paper VI it is argued that researchers and users of research are likely to differ in their knowledge and expectations of (commissioned) research and that this "gap" might lead to the production of irrelevant research and/or impair the utilisation of research. The paper focuses on how this gap can be reduced to enhance the use of research. Empirical support was found for the argument that cooperation during the production of the research enhances its use. It was also found that cooperation might substitute for assistance both in terms of conceptual and instrumental use of research information.

## **Contribution**

In a recent commentary, Slater and Narver (1999) stated that much remains unknown about market orientation and that "the understanding of what it means to be market-oriented and how a market orientation benefits the firm continues to evolve" (p.1168). The purpose of the present research is to provide insights into *how* firms understand and practise market orientation in highly turbulent and competitive environments. This encompasses several under-researched areas relating to how a market orientation can be of benefit to firms.

An important contribution of the present study is that it addresses the recent criticism of the market orientation literature for not providing practical advice on how to implement the market orientation construct (Jaworski and Kohli, 1996). The present work shows that managers themselves can sort out the issue of "how to" by adjusting the market orientation concept to their actual context. In that way, the market orientation construct can help managers – in their goal-directed efforts to perform well – to understand their market reality and to act appropriately.

Another important contribution of the present work is that it demonstrates that, when actors operate under highly uncertain supply conditions, they associate issues related to supply with "market orientation", i.e. they subsume a "new" dimension under the construct of market orientation. Similarly, the present work captures actors' conceptualisations of market



orientation when they operate in highly competitive “perfect” markets, showing that under such conditions, market orientation deviates partly from the perspective(s) reflected in the research literature, i.e. actors respond to aggregate market trends rather than the behaviour of specific competitors. These observations show, that the development of both “personal” and theoretical constructs is influenced by the context in which they are developed and used, which in turn influences their applicability.

The thesis also contributes to the literature on market orientation by demonstrating both conceptually and empirically that managers have restricted informational capacity, and by proposing and testing ways in which organisations may engage in knowledge-enhancing activities to compensate (to some extent) for their limitations. For example, the findings of paper IV indicate that the relationship between benefiting from sharing in mental models across members of top management teams has an inverted U-shape. Thus, the relationship between the sharing of mental models and associated benefits is not as straightforward (linear) as that reflected in the market orientation literature.

The present work also contributes beyond the somewhat limited sphere of market orientation. The research presented in paper III focuses on an important, albeit under-researched area of marketing, i.e. how to secure vital factor inputs in a volatile supply context. This research shows that a multitude of different strategies are applied by actors trying to control, adjust to, or reduce the effects of uncertain supply – and that few of these strategies are really effective.

The findings regarding the *inaccuracy* of managers’ perceptions of the frequencies of their own behaviour have theoretical and methodological implications which cut across the management disciplines (paper V). Here, managers are often asked to report frequencies of behaviour, such as the numbers of hours they have worked, or the number of meetings or contacts. Researchers use the frequency of such behaviours to develop and/or test theories about managers and/or the behaviour of their organisations (see e.g. Aguilar, 1967; Granovetter, 1973; Hambrick, 1982). The findings reported in paper V show that managers can make substantial errors when reporting the frequency of their own behaviour, indicating that such measures can be a serious threat to the reliability and validity of conclusions drawn from such data.



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