

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

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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.

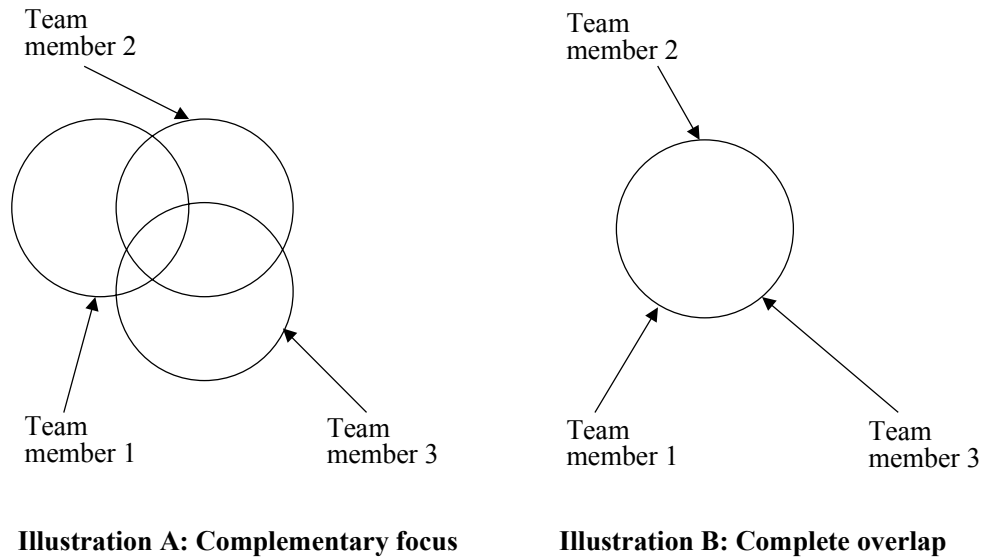


Figure 1. Two illustrations of how mental models may be shared between three team members.

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>