Market orientation in the mental models of decision-makers: two cross-border value chains

Journal:	*International Marketing Review*
Manuscript ID:	IMR-Mar-2008-0019.R3
Manuscript Type:	Original Article
Keywords:	International marketing, Market orientation, Value chain

Market orientation in the mental models of decision makers: Two cross-border value chains

Abstract

Purpose: This study determines whether predictions about different degrees of market orientation in two cross-border value chains also appear in the mental models of decision makers at two levels of these value chains.

Design: The laddering method elicits mental models of actors in two value chains: Norwegian salmon exported to Japan and Danish pork exported to Japan. The analysis of the mental models centers on potential overlap and linkages between actors in the value chain, including elements in the mental models that may relate to the actors' market orientation.

Findings: In both value chains, decision makers exhibit overlap in their views of what drives their business. The pork chain appears dominated by a focus on efficiency, technology, and quality control, though it also acknowledges communication as important. The salmon chain places more emphasis on new product development and good relations between chain partners.

Research limitations/implications: While confirming prior results regarding the role of competitive pressure, end-user heterogeneity/dynamism, regulations, and trade associations, the results also generate new insights into the possible role of relational governance in promoting the market orientation of value chains.

Originality: This article offers three novel ideas: using the concept of mental models as a possible mediator between factors that influence the degree of market orientation and market-oriented activity; using a laddering method to elicit mental models; and considering concepts shared among actors in a value chain as possible indicators of the degree of market orientation.

Market orientation, commonly defined as the generation of market intelligence, its dissemination within the business organization, and its use to direct business activities (Kohli and Jaworski, 1990), can drive superior company performance in various contexts and industries (Cano et al., 2004), including exporting manufacturers (Cadogan et al., 2003; Racela et al., 2007). Research on market orientation also investigates external factors that may influence the degree of market-oriented activities undertaken by an organization, including competitive pressures, market growth, and the heterogeneity of customers served (e.g., Avlonitis and Gounaris, 1999; Cadogan et al., 2003; Grunert et al., 2005; Jaworski and Kohli, 1993; Slater and Narver, 1994). But what is the mechanism by which such factors work? They must influence managerial decision making that selects market-oriented activities as salient courses of action.

Mental models might provide a means to analyze the extent to which manager's view customer-related or environmental factors as determinants of competitive advantage (Day and Nedungadi, 1994). This research extends such reasoning to external factors that may affect the degree of market orientation through their impact on decision makers. That is, when decision makers perceive market-oriented factors as decisive for the success of their business, they engage in market-oriented activity. Therefore, we consider the link between the organizational construct of market orientation and individual-level market-oriented cognitions, similar to recent contributions regarding individual-level market orientations (Celuch et al., 2000; Schlosser and McNaughton, 2007), the role of national culture in affecting the link between organizational factors and market orientation (Kirca and Hult, in press), and the global adoption of the marketing concept (Nakata, 2000). We also consider recent work in institutional theory that deals with environmental pressures and their appearance in managers' mental models (Daniels et al., 2002).

We attempt to clarify how such external factors affect organizations that form dyads in international value chains, because value chains, rather than individual companies, increasingly offer a more appropriate level of analysis for studies of competitive rivalry (Ketchen and Hult, 2007). Efforts to extend the market orientation concept to the value chain level fall into two classes. The first, exemplified by Siguaw, Simpson, and Baker's research (Baker et al., 1999; Siguaw et al., 1997; Simpson et al., 1999), investigates whether the degree of market orientation of one company affects the degree of market orientation in subsequent stages of the value chain. The second, as exemplified by Grunert and colleagues (Grunert et al., 2002, 2005), considers how the entire chain jointly serves an end-user market, thus defining a value chain's market orientation as the extent to which the members of the chain generate intelligence about end users, disseminate this intelligence throughout the chain, and respond with coordinated actions. This stream of research also proposes various factors that may affect a chain's market orientation, including competitive pressures, end-user heterogeneity and dynamism, trust and commitment in chain relations, whether the chains are short and balanced, regulations, and the presence of market-oriented trade associations.

We build on this stream and investigate whether and how such factors affect the mental models of decision makers in international value chains. To explain these links, we draw on institutional and relational governance theories. Specifically, different actors in a value chain may adopt unique perspectives on the factors that affect the success both of their own business and the value chain as a whole, especially in cross-border value chains, in which actors cooperate but are physically or mentally far away from one another. Recent work by McFarland and colleagues (2008) indicates that imitative behavior, which increases strategic alignment within an industry, also appears in consecutive dyads in a supply chain. Thus, different perceptions of market orientation may constrain the level of market orientation of the chains as a whole and damage its

competitiveness. Alignment, which refers to whether the interests of the value chain members are consistent, may affect the competitiveness of a value chain (Ketchen and Hult, 2007; Lee, 2004).

The remainder of this article is structured as follows: We first expand on the concept of market orientation in value chains and discuss factors that may have an impact on the degree of market orientation. Next, we discuss the concept of mental models and propose a specific type that may be useful for our analysis of the role of market orientation. Two cross-border value chain cases suggest some predictions about their degree of market orientation, so we conduct an empirical investigation of the mental models of the decision makers in these two chains, using interviews with a reverse laddering procedure. We compare the insights with our predictions; the results offer new perspectives on the role of market orientation in cross-border value chains.

Theoretical approach

Market orientation of value chains

Kohli and Jaworski (1990) define market orientation as the organization-wide generation of market intelligence pertaining to current and future customer needs, the dissemination of that intelligence across departments, and organization-wide responsiveness to it. However, following Grunert and colleagues (2002), we extend this definition to the value chain level by defining the market orientation of a value chain as chain members' generation of intelligence pertaining to current and future end user needs, dissemination of this intelligence across chain members, and chain-wide responsiveness to it. Intelligence generation refers to the sum of activities by all chain members focused on gaining information about end users, who typically are consumers. The dissemination step includes all exchanges of information about end users between and among the chain members. Finally, responsiveness refers to the actions of the chain members to create superior value for the end users. These market-oriented activities do not need to be evenly distributed across the chain; for example, the downstream retailer might be responsible for all

intelligence generation, whereas the responsiveness activities could concentrate entirely upstream with the primary production member. Only dissemination must involve all members of the chain.

Building on previous research and case studies, Grunert and colleagues (2005) propose five groups of factors that may influence the degree of market orientation in a value chain.

Heterogeneity and dynamism of end-user markets. Greater heterogeneity and dynamism results in improved payoffs from a market orientation, because the ability to tailor offerings more exactly to different consumer groups and their changing wants increases benefits.

Chain configuration. Governance structures with strong, long-term links between chain members, especially upstream, facilitate information exchanges and create trust and commitment. These factors can induce market-oriented activities, especially the upstream dissemination of end-user information and upstream responsiveness to end-user heterogeneity. Trust and commitment create openness, which enhances information exchange and reduces hold-up problems that can prevent upstream chain members from engaging in differentiation activities that require segregation and traceability.

Regulations. Regulations may make upstream, market-oriented product differentiation more difficult, especially in international chains, whose transactions often are regulated by quotas, minimum price arrangements, and so on.

Competitive pressures. Differences between the levels of market orientation often relate to differences in the competitive pressures experienced by those chains. Competitive pressure appears to determine the degree of market orientation at the organizational level (e.g., Avlonitis and Gounaris, 1999), and it may extend to the level of value chains.

Trade associations. Trade associations (and similar agents) may have a role in not only the generation of market intelligence but also the formation of mental models for an entire

industry. The extent to which trade associations think and act in market-oriented ways thus may influence the degree of market orientation of the whole chain.

Despite case study evidence of the importance of these factors, as well as research support with regard to the determinants of market orientation at the organizational level, the theoretical mechanisms by which these factors exert influences on value chains remain unclear. We propose that institutional theory (Delbridge and Edwards, 2007; DiMaggio and Powell, 1983; Meyer and Rowan, 1977; Oliver, 1988; Scott, 1987) and relational governance theory (Dwyer et al., 1987; Macauley, 1963; Rindfleisch and Heide, 1997) may provide useful building blocks for developing a theoretical framework that can explain such links.

Institutional theory refers to how institutional pressures may align organizational behaviors and strategies across an industry, as well as among actors in vertical supply chains (Brito, 2001; McFarland et al., 2008). Because market-oriented activity offers a means to deal with competitive pressures and end-user dynamism and heterogeneity, mimetic pressure on the members of a supply chain may increase (or decrease) the levels of market orientation in value chains that face higher or lower levels of such external factors. Regulation similarly can exert coercive and trade associations can apply normative pressures that may alter the levels of market orientation. Chain configuration is a unique case, in that it does not exert pressures to determine isomorphic organizational behavior but rather is an outcome variable that can be affected by other factors (Joshi and Campbell, 2003).

Research into the effects of customer dynamism and competitive pressure on relational governance has not produced clear-cut results (Rindfleisch and Heide, 1997; Sutcliffe and Zaheer, 1998), though this relationship may be contingent on the knowledge of the partners and their willingness to share this knowledge (Joshi and Campbell, 2003). The link between chain configuration and market orientation may thus be interdependent: Relational governance

facilitates the exchange of information and the coordinated responsiveness to changing customer demands that market orientation requires, but responding to dynamic customers and competitive pressure by being more market oriented also may create a greater willingness to share information and coordinate actions in the value chain, which in turn furthers relational governance. Determinants of relational governance in cross-border value chains have been analyzed (e.g., Roath et al., 2002; Roath and Sinkovics, 2006; Zhang et al., 2003), though never from a market orientation perspective.

We apply these theoretical arguments to two value chain cases and thereby derive predictions about the chains' likely level of market orientation. In this way, we determine whether higher expected levels of market orientation may be reflected in the mental models of decision makers in these chains.

Mental models

Mental models, central concepts in research on organizational cognition (Huff, 1990) and sensemaking (Weick, 1995), represent decision makers' theories-in-use, in effect, their views about which factors influence the success of their business activities. Mental models of business success provide subjective counterparts of various attempts to identify the actual success factors of a market (Grunert and Ellegaard, 1993; Sousa de Vasconcellos e Sá and Hambrick, 1989). In an international context, they also are subjective counterparts of export success factors (Kamath et al., 1987). Specifically, mental models frame the perception and interpretation of incoming information and guide decision makers' behavior, including their market-oriented activities.

We assume that mental models mediate external factors that inhibit or encourage market orientation, such that these external factors influence the extent of market-oriented activities only to the extent that they increase the prominence of market-oriented issues in the mental models of decision makers. Therefore, an assessment of whether differences in external factors actually

appear in the mental models of decision makers provides a useful approach to gain a greater understanding of the determinants of market orientation. This use of the mental model concept matches previous work in the realm of institutional theory, which evokes them as tools to explain how institutional pressures may align organizational behavior and strategies (e.g., Daniels et al., 2002). Likewise, it aligns with relational governance approaches that perceive of relations as sets of common expectations in the mental models of the relationship partners (Lindenberg, 2003).

One way to analyze mental models uses cognitive maps (Spicer, 1998), or graphical representations of a person's knowledge domain that indicate both the central concepts characterizing the domain and the way they interlink in the person's mind. The most common method to derive cognitive maps uses the network approach (Fiol and Huff, 1992; Huff, 1990), because network models are firmly rooted in research in cognitive psychology (for basic theory, see Anderson, 1983, Grunert, 1994; Norman and Rumelhart, 1975). A network model depicts cognitive structure as a set of nodes and links, in which the nodes represent fragments of knowledge (i.e., cognitive categories) and the links represent associations between them; these associations take various forms, including causality. When the links represent causality, the models represent causal maps (Bougon et al., 1977).

Another popular approach for deriving and analyzing causal maps employs personal construct theory (Kelly, 1955), which assumes that people make sense of the world by categorizing incoming information into a set of bipolar constructs, which are hierarchically ordered in terms of abstractness and linked by causality. Thus, a manager may categorize a production facility according to its efficiency (or as a bipolar construct, inefficient–efficient), which relates causally to another construct called profitability (unprofitable–profitable). Several methods can elicit people's personal constructs, as we outline in the Methods section. Personal

construct theory thus appears in a series of studies of managerial causal maps (Eden and Ackerman, 1992).

Personal construct theory has been developed into means-end theory, which has been used in a variety of business-related applications. The central construct of means-end theory is the means-end chain, a specific building block in mental models that represents a sequence of cognitive categories, ordered by the level of abstraction and linked by causality. Thus, in the preceding example, modern technology → efficiency → profitability exemplifies a means-end chain. More abstract concepts are the ends, achieved by means of the less abstract concepts. Some concepts are ultimate ends, in the sense that they cannot be means for achieving something else.

Where does market orientation appear in such mental models? To answer this question, we draw upon Day's (1994) distinction of different organizational capabilities as inside-out, outside-in, and spanning processes, as well as his claim that the capabilities of market-oriented organizations relate primarily to outside-in and spanning processes. We adopt this argument and, in our analysis of decision makers' mental models, search for outside-in and spanning processes as subjective success factors that should lead to overall organizational goals. We depict our overall conceptual model in Figure 1.

Figure 1 here

Two value chain cases

We select two value chain cases, pertaining to agriculture and fisheries, which we describe next to derive implications for the degree of market orientation, based on our theoretical reasoning. International value chains in the fields of agriculture and fisheries are of particular interest for several reasons. They serve turbulent end-user markets, in which the changing eating habits of consumers reflect their attempts to reconcile the sometimes conflicting desires for

convenience, healthy eating, high-level gourmet experiences, value, food safety, and reassurance. These desires have increased fragmentation among not only food consumers but also consumption situations. Slowly eroding barriers of trade have made the food sector more global, resulting in greater competitive pressure, especially for smaller players with undifferentiated offerings. Structural changes in retailing also have changed the power balance in these value chains. Biological variations in raw material and turbulence in the production environment (especially for seafood) obfuscate information along the whole value chain. Despite greater global proximity, considerable cultural differences mark various value chain members.

With these considerations in mind, we select two value chains that bridge European suppliers and Japanese end-user markets. The first case follows Danish pork to Japanese end users, and the second follows Norwegian salmon to the Japanese market. Both cases represent success stories. Furthermore, their structure is quite similar, as we depict in Figure 2.

Figure 2 here

Danish pork to Japan

Denmark, the biggest exporter of pork in the world, exports 85% of its total production of 1.85 million tons of pork per year. Japan accounts for 14.9% of Danish export volume but 23.2% of export value, indicating that Japan is a high value market.

Pork production in Denmark rests firmly in the hands of one major player, Danish Crown, which accounts for 94% of all slaughters. Danish Crown is a cooperative owned by approximately 20,000 pig producers. Danish Crown, in turn, owns several processing companies, in both Denmark and other countries, of which Tulip is the best known. Although only one major player remains in the Danish market, a strong trade association, the Danish Bacon and Meat Council, performs tasks related to R&D, sales promotion, disease prevention and control, and generation of market intelligence. The Danish pork sector thus entails a high degree of

concentration and vertical integration and deals with Japanese counterparts without additional intermediate agents.

The raw material for products, the Danish pig, is highly homogeneous due to a long history of breeding and quality control. Pig production follows nationally agreed specifications for weight, fat content, and so forth, negotiated by the farmers, slaughterhouses, the Danish Bacon and Meat Council, authorities, retailers, and consumer organizations. Danish farmers are paid according to their adherence to these specifications, meaning that close compliance with the product specifications improves their income. Slaughterhouses in Denmark slaughter, debone, cut, freeze, and pack in bulk the meat for the Japanese market. Danish Crown offers around 200 standard cuts, but for the Japanese market, all cuts are made to specifications, with very tight margins, such that pigs are chosen to match the cuts and avoid waste. The most common cuts are belly, loin, pig wing shoulder, calla butt, and tenderloin.

Japanese meat processing is dominated by four major players that account for two-thirds of all processed pork meat. Downstream, the value chain becomes more dispersed: Processed meat products find their way to consumers through retailers and a range of food service outlets. Japanese retailing is much less concentrated than European retailing, due to various legislative restrictions, which, though recently loosened, have resulted in a fragmented Japanese retail structure.

Relations between the Danish slaughterhouses and the meat processing companies in Japan are long-term, some lasting for more than 30 years, which offers a major competitive advantage for the Danish slaughterhouses, because relationships are very important in the Japanese business environment. Some Japanese traders and pork meat processors mention buyer power, but the vast majority of slaughterhouses, traders, and pork meat processors perceive their relations as evenly balanced.

Japanese eating habits have undergone dramatic changes and expanded far beyond fish and rice, which have been the components for traditional meals throughout the day. After World War II, Japanese cuisine became more international, though fish and rice remain the most common meal components. Pork meat consumption was 17.3 kg per inhabitant in 1999, compared with 60.3 kg in Denmark in 2001. Bacon, sausage, and ham are available for breakfast, and lunch and dinner consumption demands more diverse uses of pork meat. The best selling product is *Tonkatsu*, a special type of pork cutlet that gets breaded and pan fried.

Little domestic rivalry marks the production end of the value chain, because there is only one dominant actor. Internationally, competitive pressure is at a medium level, mainly due to competitors in the United States and Canada. The Danish offerings have a competitive advantage because of their tight adherence to the Japanese product specifications, which other competitors have not been able to achieve.

Norwegian salmon to Japan

Norway is the biggest exporter of farmed salmon in the world, exporting 85% of its growing production, which reached 580,000 tons in 2003, up from 410,000 tons in 1998. Exports to Japan accounted for 10% of volume in 2004, down from 15% in 1998. Globally, the market for farmed salmon, which was pioneered by the Norwegians, has increased from nothing to almost 1.2 million tons in the 2000s. The Norwegian growth model therefore has prompted imitators in countries such as Chile, the United Kingdom, and Canada, often driven by Norwegian entrepreneurs. Increased global competition in salmon markets has gradually reduced unit prices—in the period 1998–2004, by about 20%. Price decreases have followed reductions in production costs and the emergence of scale economies due to industrial restructuring that combined many small farmers into four or five major production and exporting networks.

Product differentiation at the farm level is very low, because basic salmon products are relatively standard and can be substituted by most suppliers worldwide.

Seafood consumption per capita in Japan has decreased recently, though it remains among the highest in the world: about 66 kg per capita live weight equivalent, compared with 50 kg in Norway in 2003.[1] However, consumption trends are changing, moving away from traditional products such as fishcakes or *kamaboko* to more high-quality, and higher value, products such as sushi and sashimi, which demand species like tuna and fresh salmon. Total exports of Norwegian salmon to Japan grew steadily prior to 2001, but they fell back to the 1998 level in 2004 due to stiff competition from Chile and growing demand from alternative markets for salmon, especially in Russia.

The relations between Norwegian exporters and Japanese importers have developed over time. Their trade relationships feature other fish species, such as mackerel and capelin, as well. Norwegian farmed salmon sold in 94 countries in 2004, though 90% of it goes to just 19 nations. To a large extent, traders are price takers in a global market, which implies that market power between the Norwegian exporters and Japanese importers is balanced. Market power in the fresh salmon market also relates to business relationships, product quality, and just-in-time global delivery; financing and storage capabilities add to market power in the frozen salmon market.

In Table 1, we summarize the two value chain cases, organized according to the five main determinants of the degree of market orientation.

Table 1 here

Methodology

For each case, we conducted preparatory desk research, using accessible documents and Web sites, and then applied this information to create an overall characterization of each value chain,

[1]See NOAA Fisheries (2003): Fisheries of the United States. http://www.st.nmfs.gov/st1/fus/fus03/index.html

including its main actors and governance structure. In the next step, we conducted key informant interviews with representatives of the producers/exporters and processors/importers.

Various techniques can elicit decision makers' causal maps (Ahmad and Ali, 2003), most of which are open techniques. The most generic approach to generating cognitive maps involves concept generation, followed by a structuration stage, in which respondents establish links between the concepts generated or provide another form of structure, such as through sorting. We adopt a method developed in the context of personal construct theory, which matches our theoretical approach. This method, called *laddering,* allows the phases of concept generation and elicitation of the links between concepts to occur simultaneously.

Laddering originally was developed by Hinkle (1965) in the context of personal construct theory (although Hinkle did not use the term laddering). Building on work by Kelly (1955), Hinkle aimed to develop a method that could elicit hierarchical meaning systems in a therapeutic context. At the most concrete level, respondents generate a personal meaning construct (e.g., I prefer active holidays), which becomes the bottom of a ladder. The interviewer then asks "Why?" or "Why do you prefer active holidays?", which prompts the respondent to generate a second, more abstract construct, such as being physically fit as opposed to physically feeble. The second construct also provokes a "Why?" question, and the process continues until the ladder has reached a level of abstractness beyond which it is impossible to continue. Laddering appears widely used in personal construct research (Costigan et al., 2000), as well as research on knowledge acquisition (Rugg and McGeorge, 1995), organizations (Rugg et al., 2002), architecture (Honikmann, 1977), and consumers (Reynolds and Gutman, 1988).

We employ a reverse laddering methodology (Bisp et al., 1998; Harmsen and Jensen, 2004), which asks informants to indicate what it takes to achieve success in their business. Their answers, which are recorded, invoke a second round of questions pertaining to relevant business

activities or competencies that are necessary to achieve these reasons for success. This procedure repeats in several layers until we attain a comprehensive tree that maps the respondents' subjective impression of the causal structure that affects their business success.

For the salmon chain, we conducted 10 interviews: 3 with Norwegian producers/exporters, and 7 with Japanese importers/processors. In the pork chain, we interviewed 12 members: 4 producers/exporters and 8 importers/processors. The salmon interviews were conducted in Japanese, and the pork interviews were conducted in English and Japanese with the help of a translator. This difference in methodology might account for some of the differences in data richness encountered for the two sets of interviews.

The laddering technique, with its extensive probing, created some difficulties for the Japanese informants, who perceived that the interviewer was insisting on talking about topics that they already had addressed. This reaction could represent a difficulty for the cross-cultural use of this interview technique and may merit further investigation. Some people may consider such persistence rude and impertinent, perhaps especially when their native languages pose the repetition of commands as a way to infer a lack of clear expression or understanding. Such interpretations are unlikely to facilitate the data collection process.

Our analysis of the laddering data follows standard procedures (Grunert et al., 2001). All the ladders are subjected to a coding procedure, resulting in a limited number of concepts at the various levels of abstraction, which in turn provide the input for an implication matrix. The implication matrix is a symmetrical matrix of all concepts resulting from the coding process, such that the entries equal the number of times that one concept is identified as implying another (causal link) across the various ladders. On the basis of the implication matrices, we can derive hierarchical value maps, which represent the standard method for analyzing laddering data in a device form by summarizing the most common links between concepts. These maps feature a

cut-off level that indicates the minimum frequency required for links to appear in the map. The choice of this cut-off level requires a trade-off between the complexity of the resulting map and information loss. The hierarchical value map also relies on a non-redundancy principle, such that there is always only one path between two concepts, and longer paths are preferable to shorter paths (i.e., when there is a link A–B–C, there cannot simultaneously be a link A–C). This analysis was done using the MecAnalyst software. The underlying procedures have been described by Reynolds and Gutman (1988) and Grunert and Grunert (1995).

Results

In Figures 3 and 4, we reveal the hierarchical value maps for producers/exporters and importers/processors, respectively, in the salmon value chain. The concepts that are shared by both groups of actors are shaded.

Figures 3 and 4 here

Specifically, the following causal chains are common to both groups of actors:

- *Market oriented product development*, which consists of the links range of products–new product development–customer preference–high perceived customer value.
- *Relationship management*, with the links customer–supplier relationships–network building–high perceived customer value
- *Quality management,* which contains the link consistent quality–high perceived customer value
- *Trust management,* with the links build trust and reputation–good relations with trade–high perceived customer value.

The rest of the maps relate to the determinants of costs, and despite minimal direct overlap, the two groups of actors seem to agree that a major determinant of lower relative costs

relates to addressing and reducing uncertainty. For processors, this reduction involves using market information to reduce risk, and for producers, they can predict demand and exercise market power.

Outside-in and spanning processes are prominent in both maps, including those parts that overlap. Product development is a classical spanning process (Day, 1994) that links understanding of customer preferences with an understanding of internal capabilities. Relationship and trust management similarly presuppose an understanding of partners as well as an understanding of one's own role in the relationship. Of the four shared chains, only consistent quality is not necessarily a spanning process, because quality parameters might be internally defined and maintained. Although the cost-related chains are not shared across the two groups, both include outside-in elements, namely, market information and ability to predict demand.

We thus conclude that producers/exporters and processors/importers of salmon have mental models that exhibit a high degree of alignment regarding the importance of outside-in and spanning processes, which, as we noted previously, are the best indicators of market orientation. We compare these results to our predictions from Table 1 in the Discussion section.

Figures 5 and 6 depict the hierarchical value maps for producers/exporters and importers/processors, respectively, of pork. These two groups of actors agree about the importance of communication abilities, safety, and modern production technologies for creating higher perceived customer value, though importers/processors perceive a mediation of this relationship by high-quality products. Likewise, they agree about the importance of production skills for achieving lower relative costs. Differences appear in perceptions of what leads to food safety: consistent quality for producers and production skills and modern production technologies for processors. For processors, new product development and control of the value chain also relate to higher perceived customer value. For producers, trade efficiency and the ensuing risk-

handling ability relate to low costs, as does having market information. Again, we relate these results to our predictions in Table 1 in the following section.

Figures 5 and 6 here

Compared with the mental models in the salmon chain, outside-in and spanning processes have a much lesser role in the pork chain. Among the concepts shared by both groups of actors, only communication abilities pertain to spanning processes. Modern production technologies, production skills, and safety are all inside-out processes. A few more spanning or outside-in processes appear in the non-shared portions of the maps. For example, product development, a spanning process, appears in the map for importers/processors. Customer–supplier relationships and trading efficiency (spanning processes) and market information (outside-in process) are in the producers/exporters map.

Discussion

The comparison of the two sets of maps reveals pretty clear pictures. The pork chain is dominated by thinking in terms of efficiency, technology, and quality control, though it also perceives communication as important. Decision makers in the pork chain thus identify the success factors for their businesses as mostly inside-out processes. The salmon chain reveals a strong shared emphasis on new product development and good relations among the chain partners. Decision makers in the salmon chain regard the success factors for their businesses mostly in terms of spanning processes.

According to our conceptual model, spanning and outside-in processes in the mental models of decision makers mediate between the external factors and the degree of market-oriented activities. We have characterized the two value chains according to factors that, on the basis of prior literature, should influence their degree of market orientation, and we have formulated some related expectations. Both chains serve end-user markets with high degrees of

homogeneity and dynamism, in which higher degrees of market orientation should lead to greater rewards. Both chains also exhibit high degrees of trust and commitment in their relationships between chain members, which facilitates greater market orientation. On the basis of these considerations, we expected that outside-out and spanning processes would be prominent success factors in the mental models of all decision makers. But we found this trend in the salmon chain only, not in the pork chain.

We therefore concentrate on those factors for which the chains differ. Regulations affecting the pork chain (especially self-regulation by Danish pig producers) appear to favor efficiency rather than market orientation, but otherwise, the main difference in Table 1 refers to competitive pressures. Those in the salmon chain are much greater than those in the pork chain, partly because salmon is a generic product, whereas Danish pork products exported to Japan can be differentiated according to customer wants. Higher competitive pressure may correlate with higher degrees of market orientation; is this explanation sufficient?

At first glance, it may seem paradoxical that a chain delivering a generic product under high competitive pressures should be more market oriented than a chain delivering a differentiated product, because successful differentiation presupposes some customer understanding. Yet our analysis of the mental models of decision makers seems to suggest this very situation. The answer emerges from our observation that the pork value chain is a “split” chain; that is, the differentiation of pork products depends on product specifications obtained from direct customers, which flow freely because of the trust and commitment between the producers/exporters and importers/processors. Maintaining these good relationships and producing products according to specifications are therefore the key success factors in the minds of decision makers. They do not regard insight into Japanese end users as necessary; the trade association does not even attempt to collect market intelligence about Japanese end users. This

knowledge, to the extent that it exists, remains with the Japanese members of the value chain. Thus, the new product development spanning process appears in the map created by Japanese importers/processors but not in the map that depicts the mental models of the Danish producers/exporters.

The salmon chain suffers more competitive pressure, because it supplies a generic product, and increased efficiencies have been eaten up by falling prices on world markets. Therefore, it may be reasonable that decision makers consider organizational capabilities, related to outside-in and spanning processes, more important, because they could allow them to move away from the generic product and supply differentiated offerings that are better adapted to heterogeneous and changing end-user demands. A generic product in a highly competitive market may increase the prevalence of market-oriented capabilities in decision makers' mental models, whereas a competitive advantage based on differentiation does not need to rely on an end-user–oriented market orientation if the value chain is split.

Perspectives and limitations

With this research, we attempt to promote three novel ideas. First, we suggest the use of mental models as possible mediators between factors that reportedly influence the degree of market orientation and actual market-oriented activity. Second, we propose the use of the laddering method to elicit mental maps. Third, we investigate concepts shared among actors in a value chain to determine whether they might indicate the degree of market orientation in that chain.

This first pilot study demands caution in interpreting the results. However, we offer some general propositions that might guide further research in this area. In line with previous research, we retain the proposition that competitive pressure and end-user heterogeneity and dynamism advance market-oriented thinking among decision makers, and we enhance this proposition by adding that this scenario holds even when most of the value chain deals in commodities. The

combination of competitive pressure and end-user heterogeneity/dynamism appears to produce this situation. Because being market oriented is an accepted way to exploit end-user heterogeneity and dynamism and minimize competitive pressure, decision makers experience the mimetic pressure to acknowledge the importance of a market orientation.

We also extend the argument that regulations and trade associations influence the degree of market-oriented thinking among value chain decision makers. Regulations exert coercive pressure on decision makers, especially those that standardize the aspects of production, and move decision makers away from a market orientation. Trade associations similarly can exert normative pressures, though in either direction by focusing on either the generation of market intelligence or questions of process optimization.

In contrast with prior research, we do not propose that a high degree of relational chain governance leads to the greater prominence of market-oriented thinking in the minds of decision makers. As the pork case shows, higher degrees of mutual trust and commitment may lead to a split chain, in which only the lower parts of the chain adopt a market orientation, while the upper part concentrates on fulfilling the desires of its immediate customers more efficiently. High degrees of trust and commitment may facilitate the exchange of information about end users and responsiveness to their changing and heterogeneous needs, but such exchanges and coordinated responses do not necessarily occur. The relationship between the degree of relational governance and market orientation actually may be U-shaped: When mutual trust and commitment increase, the upstream actors in the value chain trust their downstream partners so much that they never worry about their understanding of end users and instead concentrate on production and procurement processes. This proposition clearly requires further research.

Methodologically, we find that the laddering method is a promising tool for investigating mental models among decision makers in a value chain. We also encounter several problems with

this method though. It proved to be difficult to use with the Japanese respondents, who disliked the repeated probing and what they perceived as intrusive behavior by the interviewer. Researchers therefore might consider using less personal varieties of this method, such as employing prespecified concepts or concepts generated in a repertory grid task, which respondents then can assemble into chains or sort into piles.

Although the total number of interviews in the two chains is approximately the same, the number of ladders generated was higher in the salmon interviews, which created more data and hierarchical value maps with a higher degree of stability. There is no obvious reason respondents in the pork chain should have been less talkative or less differentiated in their reasoning than respondents in the salmon chain, so we are inclined to attribute this difference to the two different interviewers who handled the two series of interviews. Interviewer effects are undesirable, of course, and the natural way to counteract them is to provide greater structure to the interview, such as by formulating targets for both the number of ladders to generate and the number of levels a typical ladder should contain. Card sorting methodologies might achieve this standardization more easily than open interviews. Generally then, research should work to develop harder forms of laddering (Grunert and Grunert, 1995) to expand on the very soft form of laddering used herein.

Table 1
Value chain characteristics and expectations about market orientation

	Pork		Salmon	
Construct	Characterization of value chain	Implications for expected degree of market orientation	Characterization of value chain	Implications for expected degree of market orientation
Competitive pressure	Low domestic rivalry with medium international competition mainly from supply chains based in the United States and Canada. Danish products differentiated by consistent cuts tailored to Japanese specifications within a very tight margin; they have a positional advantage in terms of perceived customer value.	Medium. Tailor-made specifications require good market match and customer relations, but lack of severe competitive pressure may lead to complacency.	High rivalry among salmon farmers and value chains in Norway, Chile, and Canada. High international substitution pressure from U.S. and Canadian wild salmon. Low entry barriers for middlemen and strong price pressures in all parts of the chain. Norwegian products differentiated by the supply of a consistently high-quality generic salmon at competitive prices.	Medium. High competitive pressure motivates market orientation, but generic product directs attention more to cost and efficiency issues.
End-user heterogeneity and dynamism	High. Japanese eating habits have been changing, with components of Western eating diluting traditional Japanese eating patterns.	High. High degrees of market orientation can be exploited to develop differentiated products tailored to the Japanese market that carry higher margins.	Strong Japanese tradition of salmon consumption. Farmed salmon is attractive in high-quality (fresh) market segments of the sushi (raw fish) market.	High. High degrees of market orientation can be exploited to maintain and develop differentiated products tailored to the high-margin Japanese market segments.
Chain configuration	Farming and first level (Danish) processing are vertically integrated in a cooperative; relations with Japanese importers have developed over three decades, leading to high degrees of trust and commitment. Medium level of trust and commitment in lower parts of value chain, where there are more actors.	High in upper parts of value chain; trust and commitment in relations facilitate the exchange of market intelligence and joint responsiveness to it.	Distribution of high-quality fresh products throughout the value chain requires high trust and commitment between all links in the value chain. Long-term relations built over time from trade in other wild fish and prawns.	High in all parts of value chain, because trust and commitment in relations facilitate exchanges of market and production intelligence and joint responsiveness to it.
Regulations	Self-regulation of Danish pig sector favors efficiency; homogeneity and safety and may impede market-oriented	Low to medium. Regulations do not favor market orientation, but impeding factors have eased over time.	Norwegian fish farming licenses form an entry barrier that favors value chain concentration. Food safety regulations in Norway and Japan	Medium. Value chain concentration reduces the competitive pressure, but improves the business capability

	product differentiation, though this is changing. Japanese import regulations may reduce incentives for being market oriented.		favor standardization of quality.	for long-term market-oriented product differentiation.
Market-oriented trade associations	Danish Bacon and Meat Council has a long tradition of generating market intelligence and distributing it to members, but on the Japanese market, it has extended only to direct Japanese customers, not end users.	Medium. Favors market orientation in upper but not lower part of the value chain.	Norwegian Seafood Export Council (NSEC) generates and distributes market intelligence to members in the value chain and invests in seafood promotion for distributors and end users.	Medium. Market orientation is motivated by improved market and product knowledge in the value chain and among consumers

Figure 1
Conceptual model

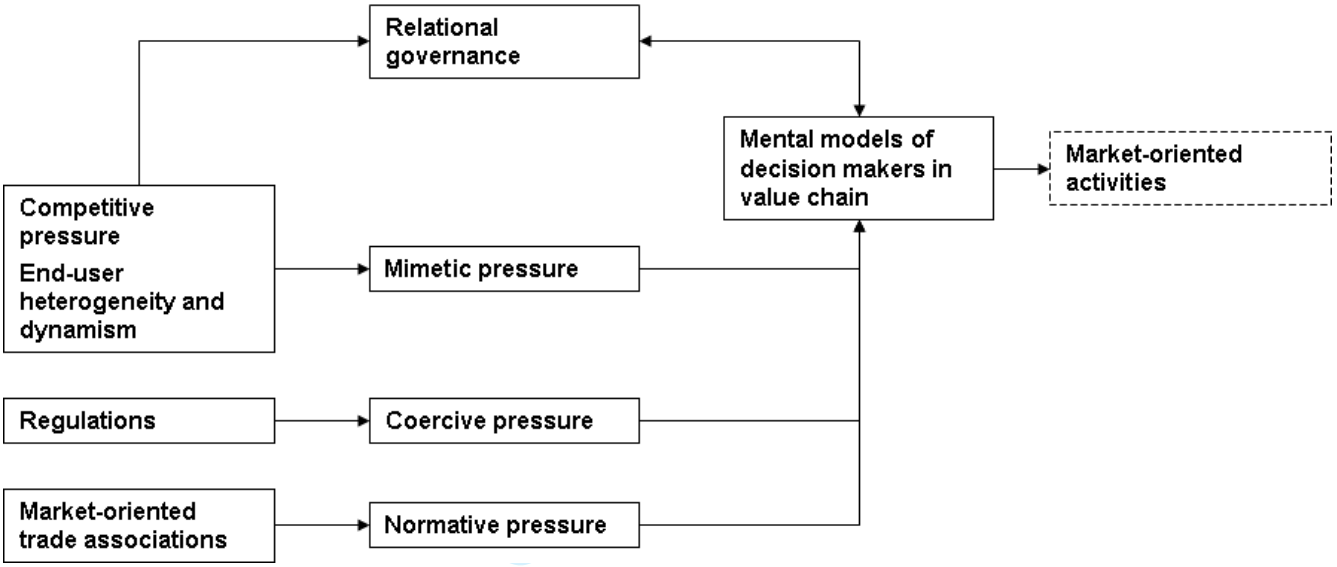


Figure 2
Value chain structure

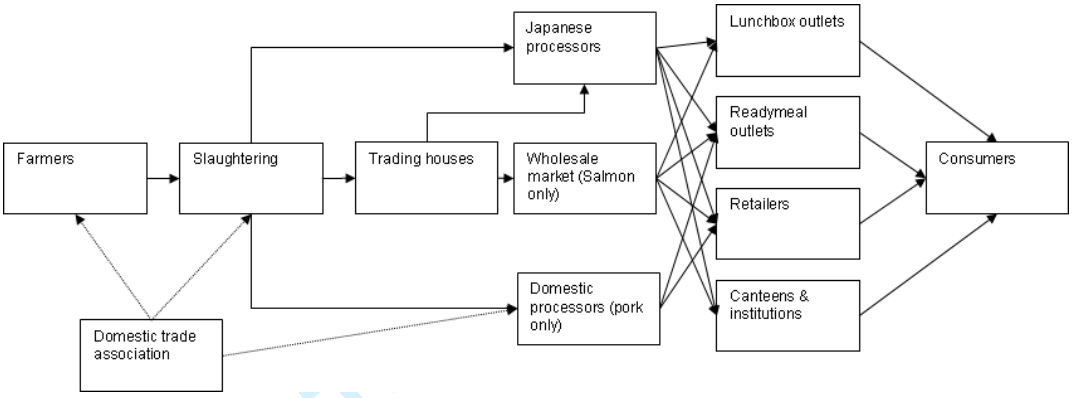


Figure 3
Map for producers/exporters of salmon

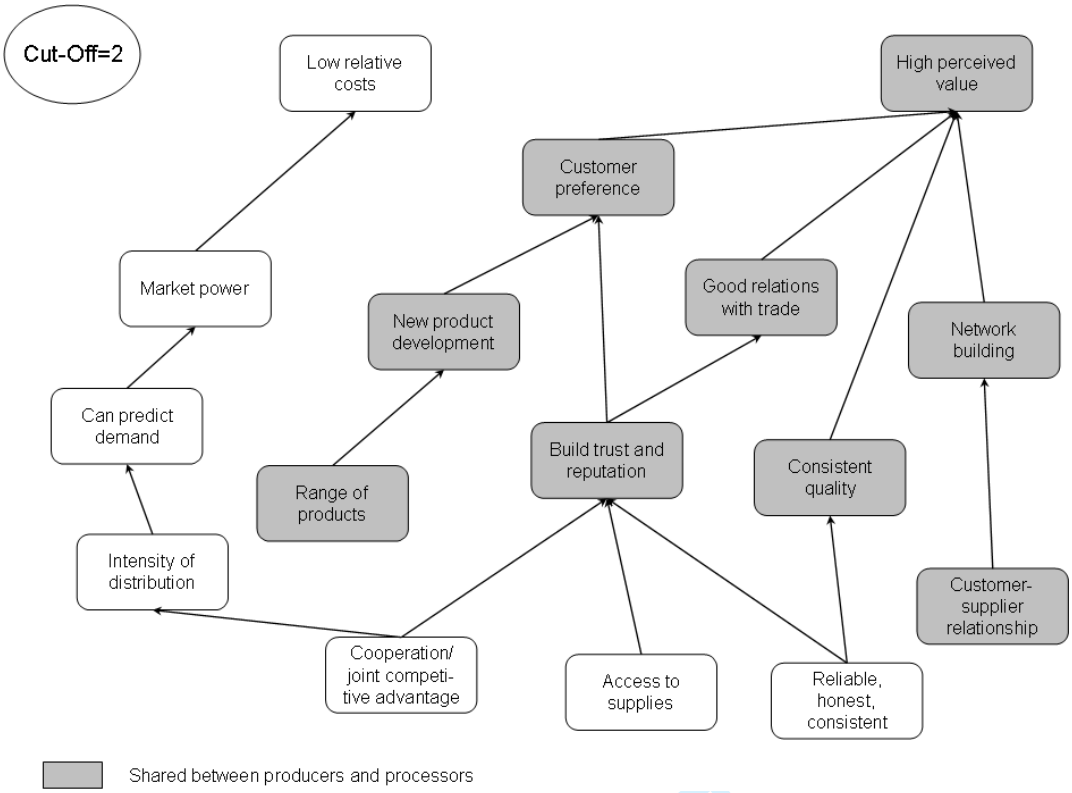


Figure 4
Map for processors/importers of salmon

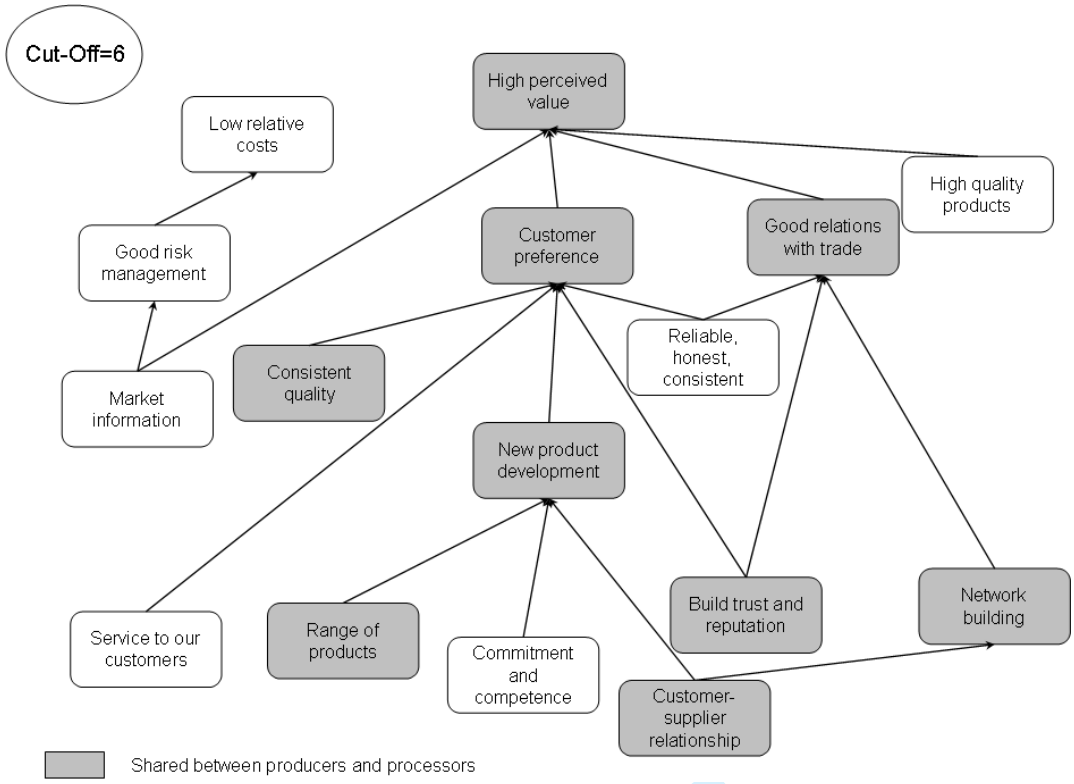


Figure 5
Map for producers/exporters of pork

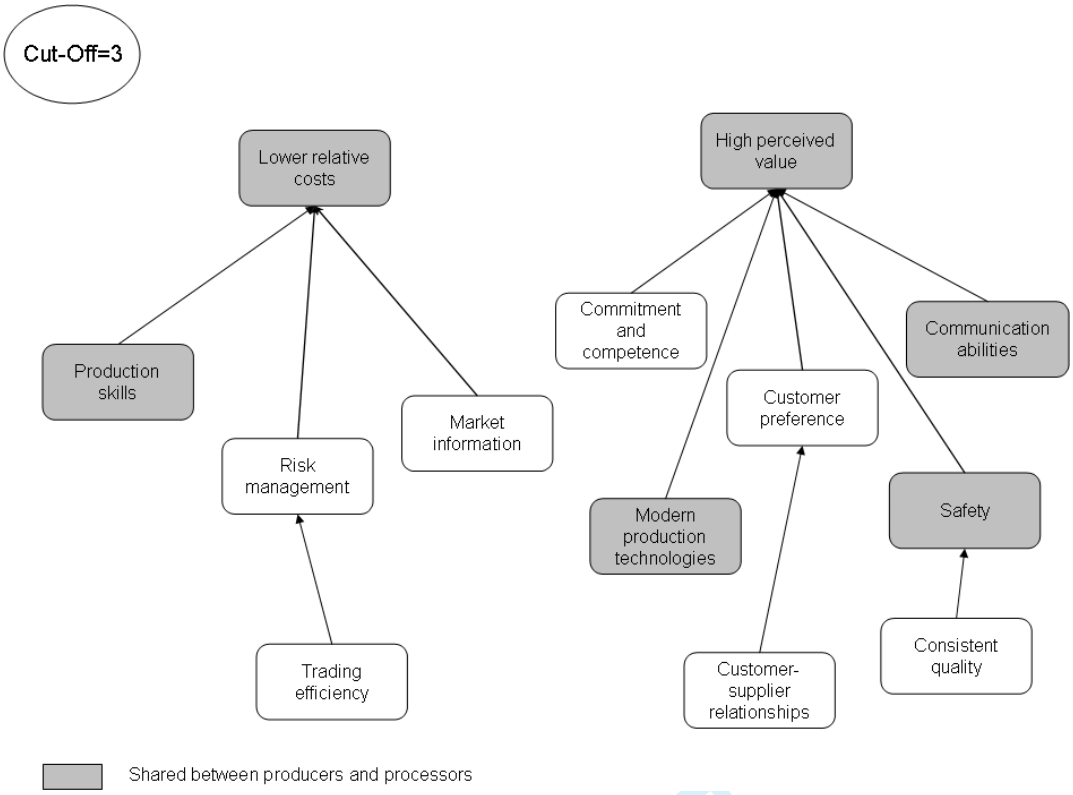
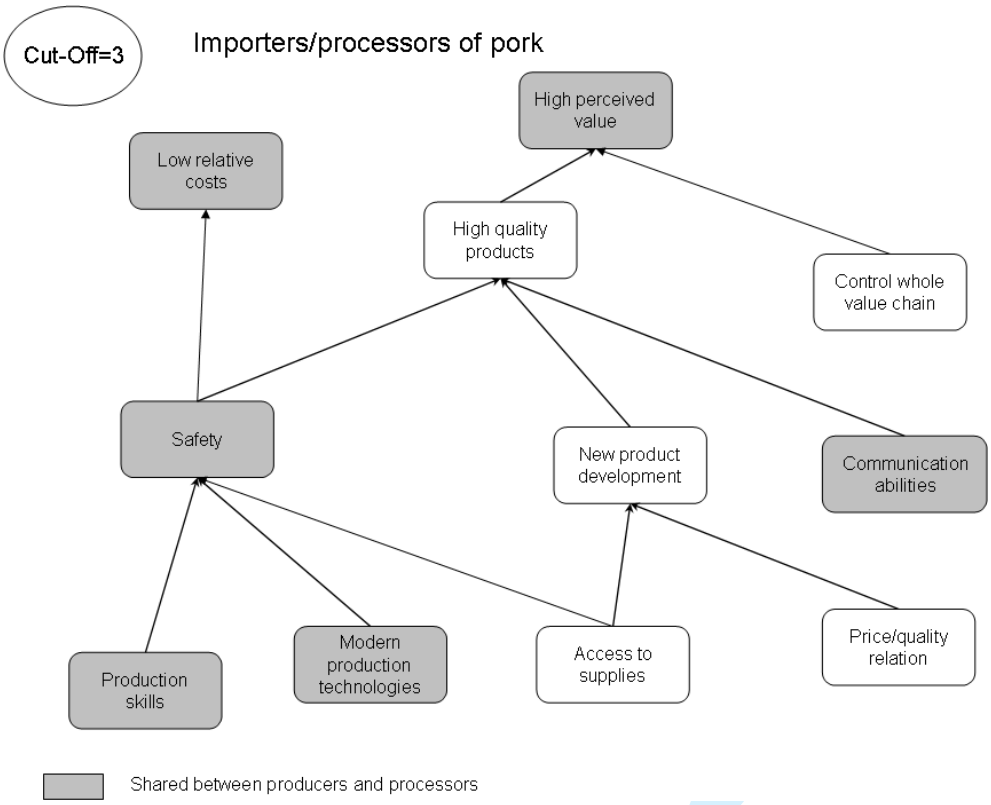


Figure 6
Map for processors/importers of pork



References

Ahmad, R. and Ali, N.A. (2003), "The use of cognitive mapping technique in management research: Theory and practice", *Management Research News*, Vol. 26 No. 7, pp. 1-16.

Anderson, J.R. (1983), *The Architecture of Cognition*. Harvard University Press, Cambridge, MA.

Avlonitis, G.J. and Gournaris, S. (1999), "Market orientation and its determinants: An empirical analysis", *European Journal of Marketing*, Vol. 33, pp. 309-566.

Baker, T.L., Simpson, P.M. and Siguaw, J.A. (1999), "The impact of suppliers' perceptions of reseller market orientation on key relationship constructs", *Journal of the Academy of Marketing Science*, Vol. 27, pp. 50-57.

Bisp, S., Sørensen, E. and Grunert, K.G. (1998), "Using the key success factor concept in competitor intelligence and benchmarking", *Competitive Intelligence Review*, Vol. 9 No. 3, pp. 55-67.

Bougon, M., Weick, K.E. and Binkhorst, D. (1977), "Cognition in organizations: An analysis of the Utrecht Jazz Orchestra", *Administrative Science Quarterly*, Vol. 22, pp. 606-639.

Brito, C.M. (2001), "Towards an institutional theory of the dynamics of industrial networks", *Journal of Business & Industrial Marketing*, Vol. 16 No. 3, pp. 150-166.

Cadogan, J.W., Cui, C.C. and Li, E.K.Y. (2003), "Export market-oriented behavior and export performance", *International Marketing Review*, Vol. 20, pp. 493-513.

Cano, C.R., Carrillat, F.A. and Jaramillo, F. (2004), "A meta-analysis of the relationship between market orientation and business performance: Evidence from five continents", *International Journal of Research in Marketing*, Vol. 21, pp. 179-200.

Celuch, K.G., Kasouf, C.J. and Strieter, J.C. (2000), "The influence of organizational market-orientation on individual-level market-oriented cognitions", *Psychology & Marketing*, Vol. 17 No. 11, pp. 935-954.

Costigan, J., Closs, B. and Eustace, P. (2000), "Laddering: Theoretical and methodological contingencies - some order and a little chaos", in Scheer, J. W. (Ed.), *The Person in Society: Challenges to a Constructivist Theory*. Psychosozial-Verlag, Giessen.

Daniels, K., Johnson, G. and de Chernatony, L. (2002), "Task and institutional influences on managers' mental models of competition", *Organization Studies*, Vol. 23 No. 1, pp. 31-62.

Day, G.S. (1994), "The capabilities of market driven organizations", *Journal of Marketing*, Vol. 58 No.4, pp. 37-52.

Day, G.S. and Nedungadi, P. (1994), "Managerial representations of competitive advantage", *Journal of Marketing*, Vol. 59, No. 2, pp. 31-44.

Delbridge, R. and Edwards, T. (2007), "Reflections on developments in institutional theory: Toward a relational approach", *Scandinavian Journal of Management*, Vol. 23, pp. 191-205.

DiMaggio, P.J. and Powell, W.W. (1983), "The iron cage revisited: Institutional isomorphism and collective rationality in organization fields", *American Sociological Review*, Vol. 48, pp. 147-160.

Dwyer, F.R., Schurr, P.H. and Oh, S. (1987), "Developing buyer-seller relationships", *Journal of Marketing*, Vol. 51, No. 2, pp. 11-27.

Eden, C. and Ackerman, F. (1992), "The analysis of cause maps", *Journal of Management Studies*, Vol. 29, pp. 309-324.

Fiol, C.M. and Huff, A.S. (1992), "Maps for managers: Where are we? Where do we go from here?" *Journal of Management Studies*, Vol. 29, pp. 267-285.

Grunert, K.G. (1994), "Cognition and economic psychology", in Brandstätter, H. and Güth, W. (Eds.), *Essays on Economic Psychology*, Springer, Berlin.

Grunert, K.G., Beckmann, S.C. and Sørensen, E. (2001), "Means-end chains and laddering: An inventory of problems and an agenda for research", in Reynolds, T.C. and Olson, J.C. (Eds.), *Understanding Consumer Decision-Making: The Means-End Approach to Marketing and Advertising Strategy*, Lawrence Erlbaum, Mahwah, NJ.

Grunert, K.G. and Ellegaard, C. (1993), "The concept of key success factors: Theory and method", in Baker, M. J. (Ed.), *Perspectives on Marketing Management*, Wiley, Chichester.

Grunert, K.G. and Grunert, S.C. (1995), "Measuring subjective meaning structures by the laddering method: Theoretical considerations and methodological problems", *International Journal of Research in Marketing*, Vol. 12, pp. 209-225.

Grunert, K.G., Jeppesen, L.F., Jespersen, K.R., Sonne, A.-M., Hansen, K. and Trondsen, T. (2002), "Market orientation at industry and value chain levels: Concepts, determinants and consequences", *Journal of Customer Behavior*, Vol. 1, pp. 167-194.

Grunert, K.G., Jeppesen, L.F., Jespersen, K.R., Sonne, A.-M., Hansen, K., Trondsen, T. and Young, J.A. (2005), "Market orientation of value chains: A conceptual framework based on four case studies from the food industry", *European Journal of Marketing*, Vol. 39, pp. 428-455.

Harmsen, H. and Jensen, B. (2004), "Identifying the determinants of value creation in the market: A competence-based approach", *Journal of Business Research*, Vol. 57, pp. 533-547.

Hinkle, D. (1965), "The change of personal constructs from the viewpoint of a theory of implications", unpublished PhD thesis, Ohio State University.

Honikmann, B. (1977), "Construct theory as an approach to architectural and environmental design", in Slater, P. (Ed.), *The Measurement of Interpersonal Space by Grid Technique*, Vol. 2. Wiley, London.

Huff, A.S. (Ed.), (1990), *Mapping Strategic Thought.* Wiley, Chichester.

Jaworski, B.J. and Kohli, A. K. (1993), "Market orientation: Antecedents and consequences", *Journal of Marketing*, Vol. 57 No. 3, pp. 53-70.

Joshi, A.W. and Campbell, A.J. (2003), "Effect of environmental dynamism on relational governance in manufacturer-supplier relationships: A contingency framework and an empirical test", *Journal of the Academy of Marketing Science* I, Vol. 31 No. 2, pp. 176-188.

Kamath, S., Rosson, P.J., Patton, D. and Brooks, M. (1987), "Research on success in exporting: Past, present, and future", in Rosson, P.J. and Reid, S.D. (Eds.), *Managing Export Entry and Expansion*, Praeger, New York.

Kelly, G.A. (1955), *The Psychology of Personal Construct*. Norton, New York, NY.

Ketchen, D.J. and Hult, G.T. (2007), "Bridging organization theory and supply chain management: The case of best value supply chains", *Journal of Operations Management*, Vol. 25, pp. 573-580.

Kirca, A.H. and Hult, G.T. (in press), "Intra-organizational factors and market orientation: Effects of national culture", *International Marketing ReviewI,* Vol. 26.

Kohli, A.K. and Jaworski, B.J. (1990), "Market orientation: The construct, research propositions, and managerial implications", *Journal of Marketing*, Vol. 54 No. 2, pp. 1-18.

Lee, H.L. (2004), "The triple—a supply chain", *Harvard Business Review*, Vol. 83, pp. 102-112.

Lindenberg, S. (2003), "Governance seen from a framing point of view: the employment relationship and relational signalling", in Nooteboom, B. and Six, F. (Eds.), *The Trust Process in Organizations*. Edward Elgar, Cheltenham.

Macauley, S. (1963), "Non contractual relations in business: a preliminary study", *American Sociological Review*, Vol. 28, pp. 55-70.

McFarland, R.G., Bloodgood, J.M. and Payan, J.M. (2008), "Supply chain contagion", Journal of Marketing, Vol. 72 No. 1, pp. 63-79.

Meyer, J.W. and Rowan, B. (1977), "Institutionalized organizations: Formal structure as myth and ceremony", *American Journal of Sociology*, Vol. 83 No. 2, pp. 340-63.

Nakata, C. (2002), "Activating the marketing concept in a global context", *International Marketing Review*, Vol. 19, pp. 39-64.

Norman, D.A. and Rumelhart, D.E. (1975), *Explorations in Cognition*. Freeman, San Francisco, CA.

Oliver, C. (1988), "The collective strategy framework: an application to competing predictions of isomorphism", *Administrative Science Quarterly*, Vol. 33, pp. 543-561.

Racela, C., Chaikittisilpa, C. and Thoumrungroje, A. (2007), "Market orientation, international business relationships and perceived export performance", *International Marketing Review*, Vol. 24, pp. 144-163.

Reynolds, T.J. and Gutman, J. (1988), "Laddering theory, methods, analysis, and interpretation", *Journal of Advertising Research*, Vol. 18 No. 1, pp. 11-31.

Rindfleisch, A. and Heide, J.B. (1997), "Transaction cost analysis: Past, present, and future applications", *Journal of Marketing*, Vol. 61, No. 4, pp. 30-54.

Roath, A.S. and Sinkovics, R.R. (2006), "Utilizing relational governance in export relationships: Leveraging learning and improving flexibility and satisfaction", *Advances in International Marketing*, Vol. 16, pp. 157-185.

Roath, A.S., Miller, S.R. and Cavusgil, S.T. (2002), "A conceptual framework of relational governance in foreign distributor relationships", *International Business Review*, Vol. 11, pp. 1-16.

Rugg, G., Eva, M., Mahmood, A., Rehman, N., Andrews, S. and Davies, S. (2002), "Eliciting information about organizational culture via laddering", *Information Systems Journal*, Vol. 12, pp. 215-229.

Rugg, G. and McGeorge, P. (1995), "Laddering", *Expert Systems*, Vol. 12, pp. 339-346.

Schlosser, F.K. and McNaughton, R.B. (2007), "Individual-level antecedents to market-oriented actions", *Journal of Business Research*, Vol. 60, pp. 438-446.

Scott, W.R. (1987), "The adolescence of institutional theory", *Administrative Science Quarterly*, Vol. 32, pp. 493-511.

Siguaw, J.A., Simpson, P.M. and Baker, T.L. (1997), "The influence of market orientation on channel relationships: A dyadic examination", Working Paper No. No. 97-103, Marketing Science Institute, Cambridge, MA.

Simpson, P.M., Baker, T.L. and Siguaw, J.A. (1999), "An investigation into potential moderating effects of the relationship between actual and perceived market orientation", *Journal of Marketing Channels*, Vol. 7, pp. 95-119.

Slater, S. F. and Narver, J. C. (1994), "Does competitive environment moderate the market orientation-performance relationship", *Journal of Marketing*, Vol. 58 No. 1, pp. 46-55.

Sousa de Vasconcellos e Sá, J. A. and Hambrick, D.C. (1989), "Key success factors: Test of a general theory in the mature industrial-product sector", *Strategic Management Journal,* Vol. 10, pp. 367-382.

Spicer, D.P. (1998), "Linking mental models and cognitive maps as an aid in organizational decision-making", *Career Development International*, Vol. 3 No. 3, pp. 125-132.

Sutcliffe, K.M. and Zaheer, A. (1998), "Uncertainty in the transaction environment: An empirical test", *Strategic Management Journal*, Vol. 19, pp. 1-23.

Weick, K.E. (1995), *Sensemaking in Organizations*. Sage, Thousand Oaks, CA.

Zhang, C., Cavusgil, S.T. and Roath, A.S. (2003), "Manufacturer governance of foreign distributor relationships: do relational norms enhance competitiveness in the export market?" *Journal of International Business Studies*, Vol. 34, pp. 550-566.