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## **A market-oriented innovative quality framework for the investigation of competitive entry opportunities into new seafood markets for producers**

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**Abstract:** This paper develops a theoretical foundation for investigating effective market-oriented strategies to enable entry into new seafood markets by means of innovation and product quality advantages. The introduction of new products to the market is associated with several factors primarily including: (1) market openness and demand for new product attributes; (2) business orientation and strategies in marketing management throughout the value chain; (3) the value chain structure; (4) regulation of the value chain; (5) balances and trends in supply and demand. The relationship between these factors is understood by combining theories of Barney's VRIO concept, the five stages of Rogers' innovation-decision process model and Porter's five forces of competition position model, summarised in a market-oriented innovative quality (MOIQ) framework.

**Keywords:** innovation quality; market orientation; competitive advantages; value chain; seafood product.

**Reference** to this paper should be made as follows: Yusuf, M. and Trondsen, T. (2013) 'A market-oriented innovative quality framework for the investigation of competitive entry opportunities into new seafood markets for producers', *Int. J. Quality and Innovation*, Vol. 2, No. 2, pp.175–192.

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## 1 Introduction

In recent decades there has been continuous growth in the demand for seafood and there are good opportunities for new high quality value-added products. The seafood trade is global as the main consumption markets and the main harvesting areas are located in different regions of the globe. The main seafood producers include China, Thailand, Norway, Vietnam, Indonesia, Peru, Brazil and Chile.<sup>1</sup> Fresh seafood is supplied mainly by producers close to the harvesting areas, while supply from remote areas is dependent on producers of more shelf stable dried, canned or frozen products due to the lengthy distribution time. The increasing imbalance between demand and supply for high quality products offers considerable market potential for producers to upgrade seafood products, especially in relation to developed markets. Introducing new products and producers to remote markets poses many new challenges for innovative seafood suppliers. This paper will outline a framework illustrating the most important factors emphasised in the scientific literature as influencing the success of the introduction of new seafood products to the market.

New producers must overcome several barriers to achieve the acceptance of new products or species in new markets. The introduction of new seafood products and suppliers will be perceived by consumers and distributors as new ideas or innovations that they have no experience of dealing with, even if the offered product is similar to other products already known to the market. Different groups of consumers and distributors may also perceive new products differently depending on their motivation, background and freedom of choice. Insights into the processes whereby new product ideas or innovations are understood and taken up (adopted) may ease the process of market introduction for new products.

Establishing trade in seafood takes place in a competitive environment in which all trading partners in the value chain, from those harvesting the fish to the consumers, have certain business advantages. Each stage of the value chain is dominated by established consumption and distribution conventions as the accepted way of doing things formed by accumulated experiences, practices and path dependencies (Arthur, 2007; Lindkvist and Sánchez, 2008). Insights into such business conventions are important in the producers' choice of marketing channels and marketing strategies. It may also be critical to understand the industrial organisation's export experience and strengths in dealing with the advanced market. Industries' on-going market-oriented experiences of innovations and qualities that satisfy preference trends in demand and of regulatory conventions are important knowledge resources for producers in speeding up the market launch of competitive products. On the other hand, the preferences and conventions of consumers and distributors in each country may have specific and unique characteristics and the competition patterns may be different. The level of risk related to market introduction may be lowered significantly if producers are aware of and analyse these constraints. Studies of experiences of seafood products currently competing in the market may give important intelligence about growing markets and convention trends in consumption, distribution and importing to the different parts of the value chain.

This paper delineates a comprehensive framework for the identification of opportunities and barriers for producers entering and penetrating new markets. The framework focuses on the intelligence necessary for strategic analysis as the first step in a product development process for competitive market-oriented innovative quality

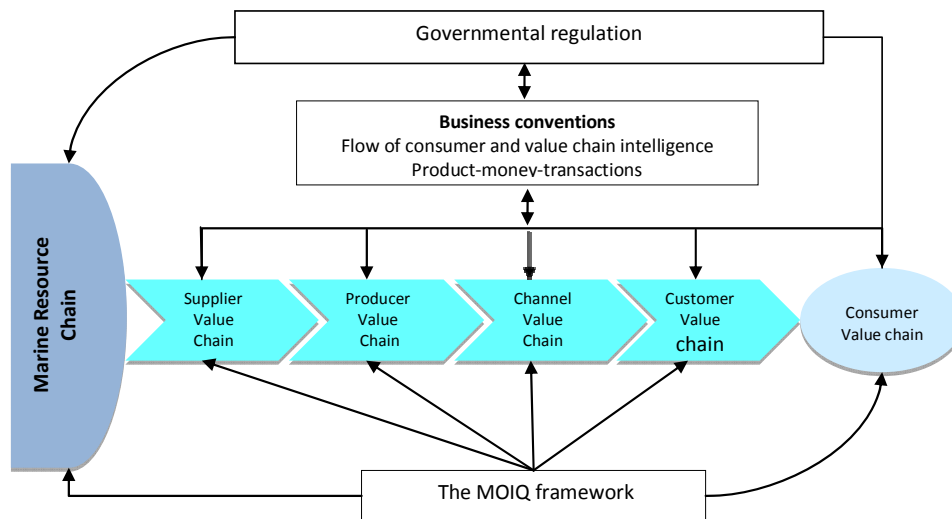
(MOIQ) products. The framework focuses on seafood markets and products although it may be useful for all kinds of food markets and products.

The paper is organised as follows: the second section examines theoretical insights concerning how performance in value chains in general may be driven by the means of innovation and quality strategies. In the third section the key factors for opportunities and barriers in the innovation adoption process are identified. The fourth section addresses the competition aspects of innovation, and conclusions are drawn in the fifth section.

## 2 Value chain performance

Industrial performance is influenced by the application of competitive strategies for MOIQ products. Efficient market-oriented industries continuously and consistently evaluate the performance of innovative products on offer in terms of their quality according to their adoption success in the targeted customer groups (Narver and Slater, 1990). The MOIQ framework provides a means of investigating those factors that are important in the business environment in terms of supporting the entry of innovative products to the competitive market. Seafood is a distinct product category in that it is recognised as having special nutritional value and is widely consumed, as well as being highly perishable. The value chain environment is illustrated in Figure 1

**Figure 1** Value chains in international seafood trade (see online version for colours)



Source: Adapted from Trondsen (2007).

The first transaction step in the marine production chain takes place when fishermen sell their catches to the producers who transfer the harvest into marketable products distributed downstream along value chains consisting of exporters, importers, wholesalers and retailers before these products are prepared and consumed; a counter stream of money flows up the value chain from the consumers to the fishermen, fuelling and driving the transaction process in providing profit for each participant (Trondsen, 2012). Super profits (profits above the normal yield) may be collected by those who take

the strongest control in terms of management over the transaction processes of the scarcest resources, relying on their competitive advantage in the value chain (Barney, 2002; Mansfield, 2003; Porter, 1980; Zhou et al., 2009).

Competitive market-oriented producers are able to gain advantage by responding efficiently to the needs and wants of wholesalers (e.g., logistics), retailers (e.g., visible quality, shelf life, turnover) and the final customers (e.g., product information, appearance, processing and taste properties, expected health impact, convenience and price) (Evers, 2010; Grunert, 2005; Lindkvist, 2009; Steenkamp and Van Trijp, 1996; Trondsen et al., 2003b; Verhees, 1999; Wessells and Anderson, 1992).

The market orientation of the value chain may be driven and controlled by firms close to the end user that understand the consumer market; an example of this is the case of US firms that took strong control of the Indonesian crab industry by controlling US imports. The products traded were well-known in the USA but were new to Indonesia when the industry was built up. The US firms in control of the money stream in terms of demand were thus in control of the value chain's potential super profit (above normal rent).

The producers also have an opportunity to collect the potential super profit by developing attractive and competitive innovative products for the market. However, the realisation of such profit requires the management of market-oriented innovation processes, clearly demonstrated in other Asian industries which have moved from cheap processing plants to own-brand products.

Attempts to increase competitive industrial advantage based on the MOIQ framework require market research to sharpen producers' intelligence concerning trends, needs and competition patterns in markets and value chains. Lukas and Ferrell (2000) found a significant relationship between product innovation successes in the market and the suppliers' degree of market orientation as an antecedent for the development of industrial conventions which also include actual practices. There are three components of market orientation which may contribute to a firm's competitive position:

- 1 customer orientation
- 2 competitor orientation
- 3 inter-functional coordination.

Customer orientation and competitor orientation represent a relative emphasis on collecting and processing information pertaining to customer preferences and competitor capabilities, respectively. Market orientation represents a set of activities that reflects the organisations' degree of adoption of the marketing concept philosophy (Atuahene-Gima, 1996).

Market-oriented innovation depends on the exploration of new possibilities through search and experimentation. The introduction of a new or significantly improved product or service to the market, or R&D improved production processes, relies on technical, commercial, and financial steps. The exploitation of existing certainties through efficiency, standardisation and control are important sources for the development of high quality competitive products and solutions. The interaction effects of quality cues and innovativeness (for supplier and customer) on new product performance may multiply the isolated impact of the sum of each of these variables (Molina-Castillo and Munuera-Aleman, 2009).

Continuous market-oriented innovation processes supported by the promotion of knowledge to the consumers, business actors and stakeholders in the field may be required in competitive markets not only for entering new markets but also for maintaining the firms' market position; this is clearly shown, for example, in the mobile phone market. The notion of 'relentless innovation' in process improvements to achieve excellence is also described as necessary for survival and strong performance in the fisheries industry.<sup>2</sup> Product innovation in the market place may also relate to the provision of solutions against market threats and opportunities for suppliers, creating the basis for the survival and success of the firms well into the future (Hult et al., 2004). It is also a threat for competitors if the total market does not grow accordingly (Porter, 1980). The impact of the competitive environment will be discussed in the next section.

### *2.1 Value chain constraints: competition patterns and pressures*

Rogers (2003, p.281) states that up to 51% of the innovation adoptions in his research could be explained by factors other than the properties of the innovations; the competition environment might favour or constrain adoption of innovations in the value chain. Porter (1980) pointed to five structural factors which may influence competition pressure on participants in the value chain and which may favour or counteract the adoption of innovations. Changes in these factors are important motivation factors for innovation activities.

Value-adding processes are influenced by different patterns of competition in each of the value chain links (Porter, 1980). Firms may be eliminated by competition in a competitive environment as a result of failing to offer attractive products or services to their customers in the value chain. At the same time, all partners in the chain are mutually dependent on each other in order to bring products from harvest to the final consumers against payment. For example, in the Indonesian crab industry, there are the fishermen, the first-hand buyers, the small plant processors, the main processors, the exporters and the importers, all independent companies but dependent on each other to offer a competitive product in terms of quality and price to US consumers. The business conventions dominating the entire value chain and the transaction links and production steps thus influence both positively and negatively the ability to develop competitive value chain positions. Competitive pressure may vary between the production stages in the value chain depending on competition patterns and structures. High competition pressure tends to motivate innovation for those firms with relevant human and capital resources, while low competition pressure, such as that in monopolies, tends to engender more innovation laziness (Trondsen, 1985).

Value chain or industry growth of established products tends to reduce the competition pressure related to products and by this also the motivation for product innovation. For example, the Norwegian salmon farming industry has increased its sales value from zero to almost US\$6 billion in 30 years, essentially by producing whole gutted salmon (head on), predominantly exported chilled on ice.

Low traditional industry growth may have the opposite effect (Porter, 1980). Innovation in new products and services might be a pathway for new growth, as clearly shown in the electronic industries but also in the seafood canning industries. The innovation pathway may, however, be dependent on the sources of competition pressure:

- *Supplier pressure* may motivate the creation of new product mixes, reducing supplier dependency on each ingredient, e.g., seafood products such as crab sticks, substituting crab with white fish and other ingredients.
- *Customer pressure* may motivate the development of new products to gain new customer attention. Changes in spending power and in retail structure may be underlying factors resulting in demand for new products and services, e.g., consumers' increasing demand for fresh food increases the retailers' need for products in their chilled food departments.
- *Competitive rivalry pressure* between firms in the same strategic group may also motivate innovation as differentiated protection measures against competitors or as a means to gain larger market shares.
- *New entrant pressure* is often armed with new product properties. The established firms are challenged and forced to invest in innovation to maintain market share. New entrants are a very important source of motivation for innovation in all industries.
- *Substitute product pressure* may also motivate firms to develop new and improved competitive products as a protective entry barrier against other industries' temptation to make inroads into established industry markets, e.g., the surimi industry's exploration in the crab market.

Entry barriers are advantages that incumbents have relative to new entrants [Porter, (2008), p.82]:

- economies of scale strengthen established firms in terms of price competition
- increasing the customers' switching costs, e.g. by sophisticated logistical links strengthens present buyer-seller relationships
- capital requirements strengthen large companies with access to the capital markets. Incumbents have advantages independent of size.
- advantages in terms of access to distribution channels strengthen those perceived as trustworthy according to established business conventions
- restrictive government policy favours incumbents and those with close governmental contacts.

Access and control over competitive market places and scarce raw material sources favour business orientations and conventions in the value chain that are continuously able to offer highly valued consumer products. The most successful value chains might combine both efficient production control and marketing orientation. High-performance firms hone their expertise in organising, implementing, and controlling marketing activities as they follow marketing results closely, diagnose problems, and take corrective action when necessary (Kotler, 2003).

## 2.2 *Supply-demand balances*

Seafood sustainably harvested from wild resources is naturally limited and the natural supply may fluctuate even as demand increases over time. These fluctuation imbalances

in supply and demand have a strong influence on fish commodity prices at the macro level. For example, the international crab industry is highly dependent on demand from the US market, with an import value of \$475 million in 2000–2011 (NMFS, 2012). Indonesia is the largest supplier of pasteurised fresh crab meat with a market share in 2011 is 35%, followed by China (29%), Vietnam (9%), the Philippines (7%), and Thailand (5%). Changes in the catches in all these supplying countries and in US demand have a direct influence on competition pressure in the value chain. For example, the export prices decreased dramatically by 15% (2008–2009) as a result of declining demand in the USA after September 2008 due to the financial crises, after steady price increases of 36% since 2003.

The need for large capacity expansions, such as China's expansion in the crab market, may, according to Porter (2008, p.85) disrupt the supply-demand balance and often leads to long and recurring periods of overcapacity and price cutting, as in the Indonesian crab industry. The seafood business is changing as the demand for added value grows in favour of pre-processed products. The market is moving drastically from traditional live seafood to freshly cooked and packaged meat, namely ready-to-eat seafood (Seafish, 2005).

Several other factors are more unpredictable, for example an abundant supply as a result of a booming harvest season when demand is stable. Unstable supply and demand balances also occur at certain times with high demand arising at particular moments, for example celebrations before the New Year, and at precisely the time that supply may be lower. Related to these cases, the producers have to absorb higher transaction costs to even out over time the imbalance between supply and the volumes demanded by intensifying trade and preserving seafood quality. Property rights management and market orientation in relation to logistics, promotion, service, price and policy are required to overcome tight market competition (Trondsen, 2012). One of the primary objectives is to identify how supply and demand influences markets and continuously to monitor trends. Information collected about product and price trends (export, import and retail) may give indications of supply and demand balances for the different products over time which may uncover windows of opportunity for new products in the market.

### *2.3 Regulations*

A stable and sustainable fisheries management system has played a large part in the success of the seafood industry (FAO, 2009). A food industry relying on harvesting commonly owned natural seafood resources is especially exposed by constraints imposed by governmental regulations concerning both harvesting of the raw material and consumption in terms of food safety and demand. These regulations impose stringent limits on the industry's room for manoeuvre and thus the alternative courses of action which might be required in order to establish marked foothold for innovations.

Regulation provides guidelines in terms of written conventions and approved product quality and trade. Therefore, the producers have to follow and keep up to date with the current regulations (Trondsen, 2007). In the case of the EU, the European Commission acts as the primary decision maker in setting standards and determining regulations, which in turn affects the product adoption rate.<sup>3</sup> On the other hand, regulation may become a barrier as a result of high standard levels and changing rules. An important question is how regulations influence current trade conventions and constrain adoption in the target seafood market. It is therefore important to obtain information from seafood

distributors concerning their perceptions of the regulatory convention barriers in their trade, barriers which exporters have to overcome in order to enter new markets.

New forms of collaboration between industry and governmental regulatory agencies, and even community groups in some cases, are driving innovation and new partnerships in managing fish quality (FAO, 2007). Access and control over limited raw material resources are often important competition factors for adding value in the seafood value chain. Controlling catch quota property rights of limited species and those in demand may favour harvesting and production business orientation and conventions in the value chains (Trondsen, 2012).

### **3 Opportunities and barriers for innovative product marketing**

Rare, attractive and highly valued product qualities and prices supported by logistics and promotion may be determined through exploration of customers' perceptions of newly offered values compared to other products. Researching seafood consumers' and potential customers' opinions of product values is important because it shows how they appreciate new solutions and what they are willing to pay for. Strategic collection of intelligence about the competitive advantage of all the 4Ps (products, place, promotion and price) is a significant and important part of a knowledge platform for market-orientated new seafood product implementation (Tomášková and Kopfová, 2010). In the seafood industry this means, for example, knowledge about the relations between the target consumers' preferences for purchasing and consumption, and the place, price level and product quality regarding freshness, taste, appearance and packaging preparation. Key success factors are the 4Ps which give the supplier a competitive advantage in the target market by offering superior values to the chosen distributors and consumers. This adoption process requires that the consumers and distributors take up the products in regular use in their daily routines (Rogers, 2003). Market penetration relates to the diffusion of new products to an increasing number of users in target markets. Thus, producers may look for seafood products that match convention trends in food preparation and consumption in the target markets. Product categories for the crab industries might, for example, be raw crab for sushi, fresh crab for cooking and boiling, or crab pieces ready for cooking or precooked for salads.

Products with a higher attraction value for the customers will have a greater chance of success if they provide unique and rare quality solutions and satisfaction to a sufficient number of distributors and consumers. There is also a significant interaction between the products' technical qualities and innovative market values [Rogers, (2003), p.14]. Market-based processes and product innovations in the food sector are built on the conviction that successful innovation requires the integration of technological and marketing research (Grunert and Baadsgaard, 1992).

Firms that aim to develop new high quality products that are innovative and rare for the market often run into difficulties because the resources and strategies needed to implement the innovations in the market are different from those needed to manufacture new high quality products in a technical sense (Lukas and Menon, 2004). In what follows, the key concepts in the innovation market adoption framework for new products will be elaborated.



### *3.1 Innovation: idea and practice*

Innovation is here defined as an idea or object that is perceived as new by adopting individuals or groups of consumers and distributors [Rogers, (2003), p.12]. An innovation is broadly construed as anything perceived to be new by potential adopters in chosen target markets, including the presented information, ideas, practices or techniques, programs or interventions, technologies, processes, or policies (Dearing, 2007). Competitive seafood innovations may therefore be characterised as new solutions in satisfying user needs and wishes. In the case of Indonesian crab products, this may mean the offer of a new solution to satisfy European consumers' demand for high quality crab products which taste better than the imitation surimi crab products, but that are cheaper than the very expensive king crab. This was the strategy Japanese companies applied when they entered the US market with crab sticks (white fish combined with a crab taste) in the late 1970s as a cheap alternative to king crab, the price of which had skyrocketed because of supply problems in Alaska (Trondsen, 1985). The blue swimming crab from Indonesia was also introduced to the US market as a substitute for expensive traditional US crab. Competition in the international crab sticks industry has made this product more of a tasteless white fish product without any crab content. This situation may open up markets for a tasty crab product mixed with other seafood, prepared for the salad market and cheaper than king crab but more expensive than crab sticks.

In order to understand the relationship between innovative suppliers and demand from customers in the market it is important first to establish to what degree the new seafood products are 'innovations' in the eyes of potential adopting customers in the target markets and value chains. An innovation that is new for one adopter group may also be so for another group, but is different from an invention which is defined as something new to the world culminating in the technical provision of the new product creation. The idea of novelties may be identical with invention if the product is new to the world, but also inventions well-known to some producers may be perceived as innovations in new markets, as when sushi, well-known in Asian markets, was introduced to the European market. Therefore, it is very important to specify the need for the innovation in the market in order to identify the diffusion pattern required in the target market.

### *3.2 Convention barriers and innovation trends*

When seafood producers want to enter new markets they have to adapt their products and marketing methods to gain competitive positions satisfying the demand trends, as well as innovation trends expressed as changes in both consumer preferences and in market conventions. The essential starting point is to identify the changes in consumer preferences that are manifested by the user conventions and consumer demands. Seafood markets involve many actors in a fairly complex competitive environment. From this perspective, there are always possibilities to ensure the satisfaction of consumers in some established product groups but also to make changes in market tastes by means of new and improved offers, as the case of sushi illustrates. Therefore, offering innovations and new strategies may be needed for competitive entry into new market segments in terms of changing consumption conventions, such as the evolving trends related to sushi consumption.

Market-oriented management may also influence the main considerations regarding the consumers which affect the product purchasing process, including improving technical property cues (the physical aspects of product) and influencing distributor and consumer perceptions through promotion. The application of novel freezing and thawing technologies is such an option; for example, new thawing technology is able to recover the fresh quality from a frozen product which may open up the distribution channels for fresh quality chilled crab products highly preferred by consumers across all cultures (Trondsen, 2013). The technology offers an opportunity to freeze seafood just after catching it, and defrost and distribute fresh quality just-in-time products for final distribution.

Consumer behaviours and demand conventions are related to quality cues and socio-demographics and to consumer lifestyles (Briz and Felipe, 2003). Consumers are entitled to choose among a variety of product offerings. It has been argued that, in many situations, the motivation of value fulfilment is a major antecedent for decision making and food choices. Numerous studies have distinguished between four general motives or drivers for food choices including health, taste, process characteristics and convenience (Brunso, 2009). Social change among consumers is also behind this restructuring of seafood demand, and this in turn is a source of changes that affect trends in product innovation. More working people lacking time for cooking seek convenient, practical and simple food products which can be prepared quickly. In addition, the greater part of the trade in fish sold to supermarkets and hypermarkets is associated with supply arrangements and forms of packaging. When consumers' tastes and rivals' strategies are dynamic, there is a competitive need for the market players to undertake continuous redesign and market adaptation of their product portfolio. Firm innovativeness described by the development and marketing of innovations is likely to involve the market, technology and competitor uncertainty (Erdil et al., 2005).

**Table 1** Intrinsic and extrinsic quality cues for seafood

<i>Cues</i>	<i>Preference</i>	<i>Description</i>
Intrinsic	Quality of meat (sensory)	Appearance, smell, taste; freshness, flavour, aroma and consistency
	Nutrition	Expected healthy content, such as Omega 3
	Form utility	Formulation or product format and convenience
Extrinsic	Origin	Product produced; producer and country of origin
	Presentation	Public consumer information on health and product safety and promotion, branding, labelling and packaging
	Guarantees	Assurance, product and eco-labels
	Economic	Product price

*Source:* Adapted from Brunso et al. (2002) and Grunert (2005).

The quality concept is of great importance for innovative market-oriented seafood innovation and can be divided into intrinsic cues (product specific attributes such as appearance and taste) and extrinsic cues (product external attributes such as health aspects and branding). In spite of their lack of any real effect on product quality, a number of extrinsic cues have been found to have a significant influence on consumer perceptions of product performance and quality; these cues include price, retail outlet and country of origin (Veale and Quester, 2009). The literature shows that, overall, intrinsic

cues are typically given more credence, unless they are insufficiently predictive in the consumers' minds or consumers have little confidence in their ability to evaluate and assess them. A conceptual theory concerning quality attributes and quality cues demonstrates the necessary requirements for effective communication of quality cues to customers in the supply chain and consumers at the place of purchase (Northen, 2000).

Innovation quality attributes are most often measured as the characteristics associated with a particular innovation and the perceptions of potential adopters [Rogers, (2003), p.22]. However, adopters' perceptions may change over time, as do social and competitive settings. In order to estimate the future market potential, it is therefore important to map the competitive product attributes and cues in relation to trading and to identify diffusion trends over time through social networks.

Commercial conventions are market-oriented products recognised by customers and markets may be evaluated by the standards of usefulness, price, and commercial quality (Lindkvist and Sánchez, 2008). Commercial product and service innovations cannot be separated from price, promotion and place of sale. Competitive innovations in seafood marketing may be developed in terms of all the 4Ps, the relationship being highly complex. Adoption of the innovation in the market will also depend on:

- 1 product quality, presentation and packaging
- 2 place of sale and distribution (logistics, stocking and retailing)
- 3 promotion (branding, labelling, public relations activities) and service
- 4 price, also signalling quality (Kotler, 2003).

Highly valued and rare products improve the differentiation potential in the market and enhance the value of a product [Barney, (2002) p. 145]. Therefore, the new seafood market research includes intelligence that maps windows of opportunities in unsatisfied demand caused by market trends in all the 4Ps:

- *Trends in offered product and service values in the market* may cause a lack of offers satisfying supply in relation to demand for highly valued product properties or solutions, such as freshness, nutrition, convenience, etc. For example, traditional suppliers may only offer sterilised tinned crab whereas the consumers have a preference for fresh looking products in transparent packages.
- *Trends in place (distribution and logistics)* may cause a lack of offers satisfying supply in terms of being in the right place, at the right time and at the right price to meet consumer purchase patterns. By applying advanced defrosting technologies just-in-time for final consumption, remote producers may supply frozen products to the market place, and to retail chains for chilled products.
- *Trends in promotion and presentation* may result in a lack of necessary promotion information to the consumers. For example, this may be a lack of information concerning quality standards in the primary production processes which then result in barriers to the adoption of products from such new sources of supply.
- *Price trends* may result in a lack of substitution of products that take advantage of price inflation in other products, as in the king crab example. Both distributors and consumers may make their price judgments in terms of 'value for money' where the value reflects all the offered 4Ps.

#### 4 Strategic innovation choices

The VRIO concept outlined by Barney (2002) is an analytic tool to help organisations evaluate the competitiveness of their business resources in product markets. It comprises the following aspects:

- *value*: the users' value perceptions of a product, for example of the freshness and taste of crab products compared to customer preferences
- *rareness*: the users' value-for-money perceptions, for example of a blue swimming crab product price compared to similarly valued products
- *imitability*: value protection against imitation from other suppliers
- *organisational*: value protection built through superior production and marketing organisations.

Many global seafood companies, such as Marine Harvest, Pescanova, Icelandic, etc., rely partly on organisational competitive advantages without supplying particularly superior value-for-money rare products. These companies may instead offer rare value in terms of a stable supply of huge volumes of competitively priced standard products delivered to the desired locations. To gain a sustainable competitive advantage from supply markets, companies may offer a value proposition in terms of value, worth, rarity and continuous supply (Venaik, 2002). Value as offered by the companies is showing the capacity to attract many customers.

The development of business conventions is a response to competition pressure and market opportunities in value chain structures. The higher the VRIO value the stronger the competitive strength and market power for adding value in the transaction process between the raw material supplier and the end customer (Trondsen, 2003).

##### 4.1 *Competitive market adoption of seafood innovations*

In spite of the continued importance of innovation attributes for research methodologies and the increasing tendency toward multidimensional conceptualisations, a theoretically derived and empirically developed classification of innovations is still lacking (Adams et al., 2006). True value added is usually some combination of relative advantage in product qualities and packaging that reduces labour at the end user level through easier handling and greater convenience in preparation, which is also compatible with the target market's user conventions (Johnson, 2002).

The development of product and service attributes attractive to the market is critical for market success. Rogers' characterisation of five innovation attributes has become the core theory explaining the adoption of innovations by, for example, distributors and consumer markets as social groups.

Different consumers and distributors may classify the attributes of innovation differently. *Consumers* may consider these attributes according to their preferences, appetites, cooking capability and consumption settings. The consumers' values will, in turn, have an impact on their judgment of how the different extrinsic and intrinsic quality cues are perceived and evaluated (Grunert et al., 2004). *Distributors* may consider these attributes relative to profit possibilities and value chain management conventions.

**Table 2** Five attributes of innovation influencing the adoption of new seafood products (NSP)

<i>Innovation attributes</i>	<i>Meaning</i>
Relative advantage	The degree to which NSP increases the customer value better than products covering the same needs for the customer group, e.g. blue swimming crab substituting king crab. The adoption rate increases the higher the relative advantage perceived by the adopting group.
Compatibility	The degree to which NSP is perceived to be consistent with conventions in the customer groups, e.g. how a crab should taste and be prepared. The adoption rate increases the higher the compatibility perceived by the adopters.
Complexity or simplicity	The degree to which NSP is easy to understand and use among the members in the customer groups, e.g. the use of the same method for removing and preparing the meat, or opening the can. The adoption rate increases the lower the complexity perceived by the adopters. In addition, extra functions designed to provide differentiation may increase the complexity militating against imitation.
Trialability	The degree to which the customer group can experiment with the NSP on a limited basis, e.g. test sales period at the distributors, product samples, etc. The adoption rate increases the higher the trialability perceived by the adopters.
Observability	The degree to which NSP cues are visible to others in the same adoption group through direct and indirect promotion. The adoption rate increases the higher the observability perceived by the adopters.

*Source:* Adapted from Rogers (2003, p.15).

Even if consumers and distributors share the same food conventions, changes are forced upon the markets over time driven by competition and new innovations which take advantage of different attitudes and preferences in the market place (Schumpeter, 1934). Growing market segments of consumer and distributor groups with a high willingness to pay for specific product qualities are attractive targets for the marketing of new innovative seafood products (Porter, 1980). For example, expensive Japanese sushi and high quality tuna fish have had great success among consumers willing to pay for high quality convenience food. Another example is the cheap farmed Vietnamese pangasius which has penetrated the European market, primarily based on the demand for very cheap seafood often at the expense of quality. All new products and suppliers entering the market are adopted as innovations by their buyers. Thus, it is important to review and take into consideration constraining market conventions and preferences in these seafood customer groups as part of the product development process since this provides a basis for targeting the most attractive market channels for potential new products.

Rogers, (2003, p.22) identified five categories of adopters in most social groups in relation to the timeline from when innovations become known to when they are fully adopted in socially linked groups such as consumers, chefs or retailers. These categories are: innovators, early adopters, early majority, late majority and laggards. Distributors, chefs and consumers form social networks that follow certain common trading conventions and adoption patterns for new innovations. Bass (2004) complements the findings by incorporating the time of purchase, and dividing the purchasers into

innovators and imitators. The important difference is that the imitators are influenced by the innovators and opinion leaders are more influenced from outside the social group to which they belong. Such models of diffusion of new products and technologies are widely used in management science. The challenge for the suppliers is to identify the innovators and early adopters among the consumer and distributor groups interested in new competitive seafood products, but also the supportive opinion leaders for each group. For example, the health and taste aspects of seafood have become the subjects of public debates and opinion leaders comprising famous chefs and nutrition experts play an increasing role in the consumption of seafood. Business organisations are also important in opinion formation in the seafood industry when it comes to the adoption of innovations (Trondsen, 1985).

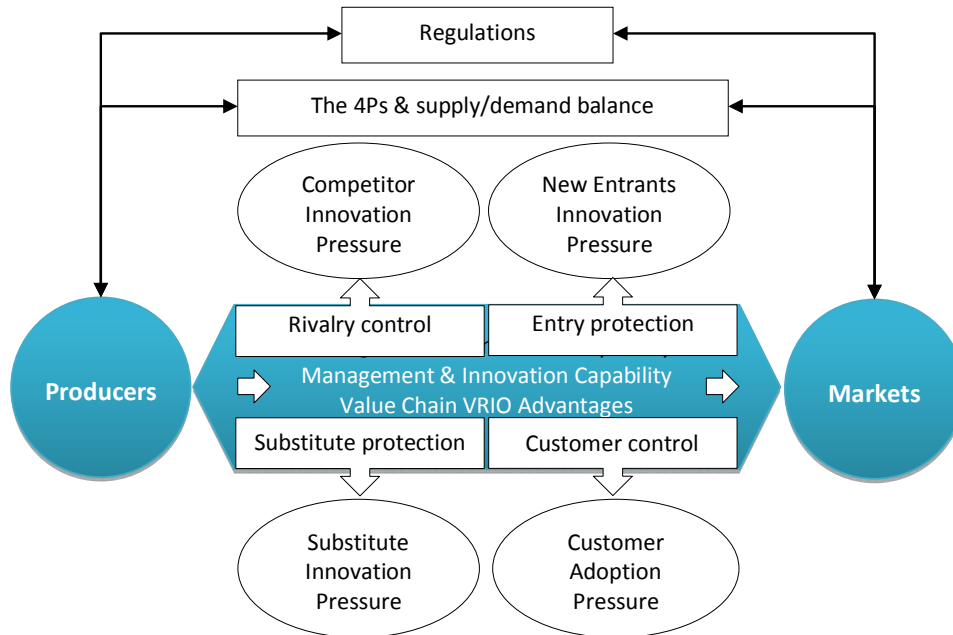
Generic strategies may differentiate between product or service offerings from firms, creating something that is perceived industry wide as unique [Porter, (2008), p.85]. Variations in the individual consumers' consumption patterns result in part from the suppliers' differentiation between trend variations in the characteristics, needs and wishes of consumers. The consumer groups that follow the same consumption conventions, including preferences, beliefs and practice, may be segmented according to demographic variables, including gender, age, income, education, region and household size (Trondsen et al., 2004). Differences in age, income, education, occupation and geographical location indirectly affect seafood purchase and consumption decisions, where level of education increases awareness of environmental issues and what is healthy food (Trondsen et al., 2003a).

Firms that follow the same business conventions might be defined as strategic groups which compete for their share of the same markets by following the same core strategies and practices. Competitors become more alike as industry conventions emerge, technology is diffused and consumer tastes converge [Porter, (2008), p.88]. The competition and convention patterns of the distributors may determine the variation in innovation categories between them. Although in practice distribution relies more on each individual distributor, an inter-dependent distribution network is possible, imitating management practices for the purpose of renewal.

All the convention variations created among consumers and distributors are also the foundation for a range of opportunities for new innovative products. The challenge is to find large enough market segments which can be dominated and match the capabilities of the firm regarding value chain access, volume and price. It is therefore important to identify the social structure of the customer groups in advanced attractive markets and their dominant demand conventions regarding adoption patterns of new food products.

## **5 Conclusions**

This paper has developed a MOIQ framework to understand the critical factors necessary to identify and address the competitive market introduction of innovative seafood products. Successful commercial innovation creation is strongly related to new competitive market-oriented ideas, products, services, practices, or processes based on reliable marketing intelligence analysed in the multi-approach framework.

**Figure 2** The MOIQ framework (see online version for colours)

Source: Adapted from Trondsen (2012).

The factors indicated in the framework (Figure 2) that favour competitive market adoption of innovations are:

- 1 value chains with lower regulation barriers against innovation
- 2 negative supply-demand balance of similar products and marketing solutions which open up the market to newcomers
- 3 efficient two-way communication and capabilities of marketing and innovation intelligence able to create attractive product and service concepts
- 4 access to value chains and customers in attractive market segments open to testing and adopting innovative qualities
- 5 control against imitation (I), e.g. patents and licenses, organisation designs (O) for the protection of competitive innovation advantages in terms of the 4Ps (product, place, promotion and price), values (V), and rarity (R) for customers in all the value chain relations with suppliers, customers, subsidies and new entrants pushing innovation.

We argue that this framework involves important factors that could be barriers as well as opportunities. Innovation creation for competitive success means developing market-oriented ideas and practices for new products, services or processes adopting a multiple approach and marketing intelligence. Finally, innovation precisely equipped with high quality, high value market-oriented products will encourage the growth of seafood industries and other business supporters.

## Acknowledgements

The authors are very grateful to the Norwegian College Fishery Science, University Tromsø, Norway and the Indonesian National Education Ministry for the support funding for this research project.

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## Notes

- 1 Seafood Marketing Insights, online <http://www.seafoodsource.com/>.
- 2 See Phillips (2012) 'Shifting from occasional to relentless innovation'.
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