

This file was downloaded from BI Brage,
the institutional repository (open access) at BI Norwegian Business School
<http://brage.bibsys.no/bi>

Market policy and destructive network effects

Morten H. Abrahamsen
BI Norwegian Business School

Håkan Håkansson
BI Norwegian Business School

This is the accepted, refereed and final manuscript to the article published in

The IMP Journal, 10(2), 195-220

Publisher's version available at

<http://dx.doi.org.ezproxy.library.bi.no/10.1108/IMP-09-2015-0052>

Copyright policy of *Emerald Publishing Group*, the publisher of this journal:

“Emerald supports authors' voluntary deposit of their own work. Once an article has been published by Emerald, an author may voluntarily post their own version of the article that was submitted to the journal (pre-print) or the version of the article that has been accepted for publication (post-print) onto their own personal website or into their own institutional repository with no payment or embargo period.”

<http://www.emeraldgrouppublishing.com/openaccess.htm#green>

An additional written agreement between Emerald and BI Norwegian Business School states these rights to BI authors.

Market policy and destructive network effects

Abstract

This paper analyses how different policy perspectives or logics regarding industry organising affect network interaction, with particular focus on how the availability of resources is organised. To examine this we compare two cases from the Norwegian seafood industry: In the pelagic industry, the main resource (mackerel) is caught at sea by fishing vessels and trade is restricted by an auction system, whereas in the salmon industry, the main resource (farmed salmon) is an industrial product produced at fish farms and there are no such restrictions.

Our results indicate that conditions under which resources are available to a network have strong effects on connected relationships: In the pelagic industry, interaction in the network becomes supplier-directed in an attempt to reduce the uncertainty created by unstable and restricted availability of resources, whereas in the salmon industry the interaction becomes customer-directed as resource availability is stable and predictable. Here the actors can broaden the scope of interaction and they can direct their efforts to solve their customers' problems, whereas this is difficult in the pelagic industry. We conclude that policy considerations play a major role in these effects. If the resource (fish) is seen as a commodity and the interaction is seen as a market mechanism, the policies designed to facilitate the exchange of resources will be beneficial for the actors directly involved, but may have unintended negative consequences for indirect relationships. For policy makers this implies that whenever developing an industrial policy there are strong reasons to look beyond the single transaction in order to create policies that are effective and/or beneficial for all involved and connected parties.

Keywords: Resources, interaction, networks, policy, relationship development, seafood

The research reported in this study was funded by the Seafood Research Council in Norway (FHF).

1. Networks and industrial policy

Policy makers have always sought to intervene in the business landscape. A discussion of industrial policy is also a discussion of the role of the “state” vs. the role of the “market”. This balance has shifted throughout history: From Adam Smith’s “invisible hand” where the market is seen as ensuring a stability between supply and demand and the state being a facilitator more than an actor in the economic exchange, to Keynesian economics in the post-war era where the state becomes an active participant in terms of direct ownership, market regulations and industrial policy making. This historical development is also reflected in different theoretical perspectives on how the economic exchange should be organised. In the first industrial revolution, market exchange advocated by classical and neo-classical economists was the predominant logic. In the second industrial revolution, large integrated hierarchies benefitting from economies of scale as identified by Chandler (1977) became the dominant economic perspective. With the third industrial revolution (Rifkind 2011) from the 1970s onwards, hybrid or network-like organisations and industrial collaboration came into focus. Webster (1992) sees such hybrid organisations at somewhere between “markets” on the one side, and “hierarchies” on the other side. In this typology of organisations, business actors co-operating in close relationships are benefiting from the stability and interdependence that is commonly associated with hierarchical structures, whereas they also have independence associated with the market perspective. With the new focus on hybrid organisations came new theories about how industrial interfaces should be organised: Transaction cost economics theory (Williamson 1981; Williamson 1975), principal-agent theory (Laffont and Martimort 2002), economic cluster theory (Porter 1998), marketing channels and supply chain management theory (Christopher 1992; Stern and Reve 1980) and industrial network theory (Håkansson and Snehota, 1995; Håkansson et al. 2009) all represent different theoretical perspectives on organising customer-supplier relationships.

Herein is implied that different theoretical perspectives on how market exchange is organised will also be reflected in the principles on which policy makers base their interventions. Håkansson et al (2009, p. 237) argue that *“If the principles are based on traditional economic thinking, on a model of the world that assumes that markets tend towards some sort of stability between supply and demand, then the basic policy approach is concerned with how to reduce market imperfections... as long as the market is active and the process of allocating scarce resources is not disturbed, new resources are automatically absorbed by the market and create growth, and a new equilibrium emerges”*. Conversely, if we look at market exchange not as

something that is limited to short-term transaction episodes but as part of a continuing relationship between interdependent actors, the policy implications will be different. From an industrial network theory perspective, “...a network consists of the tangible and intangible investments that comprise the connected relationships between two businesses... [it] develops through the process of constantly mobilizing and combining internal and external resources and activities” (Håkansson et al., 2009 p. 236). The policy considerations in this respect are far from easy because they will involve policies on investment and mobilisation required to support and sustain ever-changing network processes. Nevertheless, research on policy principles within the IMP (International Marketing and Purchasing) tradition indicates that policies are seldom influenced by empirical studies of business networks, but are rather “...based on principles that are close to those expressed in traditional economic theory and institutional economics” (Håkansson et al, 2009, p. 237). For instance, research on innovation policy by Waluszewski (2011) and associated scholars at the Science and Technology Studies research group (Eklund and Waluszewski 2015; Rider et al. 2013), found that there are gaps between policy considerations and the interdependencies found in real innovation processes. Their studies show that innovation policies aimed at stimulating economic growth reflect an underlying logic, that geographical innovation networks can be created and sustained for the benefit of its actors, an economic perspective often associated with geographical and economic clusters or innovation systems theory (Porter 1998). As a result, policymakers see innovation as something that can be steered, whereas studies within the IMP tradition observe that the connectedness and interdependence of economic resources transcends geographical boundaries (Håkansson 1982; Håkansson and Snehota, 1995; Håkansson et al. 2009). Equally, work on public procurement in the Swedish medical industry (Waluszewski and Wagrell 2013) shows that public procurement policies, often associated with neo-economic theory or the new institutionalists (Williamson 1981; Williamson 1975), hinders innovation, instead of promoting it. Research into the construction industry in Norway and Sweden (Bygballe and Ingemansson 2011) additionally indicates that public policy seeks to achieve innovation by promoting competition, but instead acts as a barrier to renewal. This strong focus on competition as a mechanism to enhance market efficiency is strongly related to classical economic theory.

Overall, these studies seems to suggest that the principles which policymakers use to intervene in the business landscape do not reflect the characteristics of this landscape as it is observed in empirical studies. This means that we can expect to find a similar discrepancy in the way in which policy makers seeks to organise the seafood industry, compared to the characteristics of

this industry as experienced by the connected business actors. Yet, this remains a largely unexplored research area, which in itself justifies an in-depth study.

2. Salmon farming and mackerel trading: Two types of industrial policies

Seafood is a natural resource of great national economic importance. For Norway, seafood is the second largest export industry, oil and gas exports being number one (Norwegian Ministry of Fisheries and Coastal Affairs 2012). It is therefore given that policymakers seek to exert some control over how resources related to this vital industry are developed and exchanged. This is also the case for the salmon farming industry and the pelagic industry. Yet, there are different perspectives concerning the ways in which these two industries are organised. In the salmon industry, there is regulation on the production side in terms of operating licenses. A similar logic is found in the organising of the Norwegian oil and gas industry, where operating licenses are given to a number of oil exploration and production companies, in annual rounds. Traditionally, salmon fishing up-rivers was seen as an expensive leisure activity and only small numbers of fish were caught and traded for commercial purposes. However, in the 1970s, industrial entrepreneurs started experimenting with farmed salmon. The combination of a product with a high nutritional content, a high-end image and production locations in sheltered fjords along Norway's long coast-line, proved to be an industrial success. This development was strongly aided by the government giving licenses to a growing number of salmon farming companies in an attempt to aid the development of this industry. Today, the salmon farming has become a mature industry and the Norwegian salmon producers are increasingly involved in farming activities abroad, such as in Chile, Scotland, Canada and New Zealand.

In the pelagic industry, there is also regulation on the production side as the fishing is subject to annual quotas. This is in a way comparable to the operating licenses characterising the salmon industry. But whereas the salmon farmer is able to produce the volumes and quality of salmon restricted only by the production capacity of his farm, the quality and volume available to the pelagic fishermen is restricted by annual variations in stock and quotas. However, the most interesting feature of the pelagic industry is the additional regulations on the trading side. In Norway, all pelagic fish caught at sea by fishing vessels must be traded through the Norwegian Fishermen's Sales organisation for pelagic fish (NSS). This sales organisation has been given certain rights by the government. A key characteristic of this system is that the sales are managed through a closed auction system, and the buyers are not allowed to buy their fish directly from the fishing vessels. Norwegian law also prevents vertical integration, and no buyer

is allowed a larger share than 49% ownership in any fishing vessel. Historically, the fishermen were not organised and the power balance was often in favour of the industrial buyers. In 1927 the fishermen set up the NSS to act as a united counterpart against the industry. Later, the organisation was given certain rights and responsibilities regarding how the fish is to be traded. Today, the NSS handles 2 million ton of fish annually, worth between 750 – 1000 million EUR (Norges Sildesalgslag 2013).

The logic behind this system is that the fish is seen as a commodity product. Cantillon (2010) came to a similar conclusion studying the role of the Norwegian Seafood Export Council, a body set up to help marketing Norwegian seafood abroad. Cantillon (2010, p. 19) argues that *“commodities are items that are traded. They are homogeneous and therefore the interaction between seafood actors is assumed to be less substantial due to the short term nature of each transaction”*. In fact, Alfred Marshall, the influential neo-classic economist, used the fishmarket as an illustration of his arguments of *“the perfect market”*. In her review, Cantillon came to the conclusion that there is a tendency for using market models underpinned by neoclassical assumptions in business literature and research on the seafood exchange (eg. Asche et al. 2002; Jin et al. 2007; Myrland and Kinnucan 2005; Wellman 1992), and that these fundamental assumptions are present in the views of politicians attempting to understand this particular industry (Cantillon, 2010). The same can be said about the pelagic auctions, as they assumedly are established from a “market” perspective (This angle is further explored in a recent publication by the authors, Abrahamsen and Håkansson 2015a). As such, we can recognise similar theoretical underpinnings by policymakers concerning the seafood industry as the studies presented in the previous section reports. We will explore this in more detail in the next section.

3. Policy and interaction in the seafood industry

In political science, we come across the term “quango” (quasi autonomous non-governmental organisation). First introduced in the UK in the 1960s, it is used to describe a certain type of non-governmental organisations (Deacon and Monk 2001). Quangos are often publicly funded and undertake public policies (van Thiel 2004), and are introduced to carry out certain tasks such as service delivery, licensing, policy advising, regulatory and policy elements (Massey 1997) as well as represent the interests of certain groups (Deacon and Monk, 2001). They have access to significant resources (financial, capabilities and information) and have important roles to play (Delmas and Terlaak 2002). One universal characteristic of quangos are that they are

designed to influence a particular industry (Cantillon, 2010). The NSS and the pelagic auction system has several of these characteristics. NSS is an organisation which has been given certain rights by the authorities. However, it is a cooperative, set up by the fishermen, not by the politicians. It is designed to facilitate the exchange of fish between sellers and buyers, but it also protects the interests of the sellers in particular. Thus it represents both the underlying free market logic, but it is additionally a political entity helped to infiltrate the markets, resembling what Pliatzky (1992) refers to as political attempts to intervene in the market economy, or a domesticated market in terms of Arndt (1979). Overall, it reflects microeconomic principles suggesting that firms operating in a free market can be helped, whether directly by law or indirectly by policies and regulations.

An underlying assumption here is that interaction in the seafood industry is straightforward, and the exchange between buyers and sellers is limited to a specific point in time. However, several recent IMP studies of the seafood industry show that interaction in this particular industry is complex. It is an ongoing process where the current exchange episodes are based on previous experiences and future expectations, and it involves a range of actors across connected relationships, where fish is perceived not as a commodity product, but as a heterogeneous resource which can be developed and utilised in close interaction with suppliers and customers (Olsen 2012). More specifically, studies suggest that resource heterogeneity found in the seafood industry has implications for the way business relationships are managed (Holmen and Pedersen 2012); the way in which seafood as a resource is combined with other resources determines the level of customer-supplier integration (Abrahamsen and Håkansson 2015b); interaction in seafood markets have richer content and are better organised than previously understood (Cantillon and Håkansson 2009; Cantillon et al. 2006); managing interaction in the seafood industry involves a range of complex networking processes for the connected actors (Harrison 2012); resource development often take unprecedented directions, which in itself is a driver of innovation (Hoholm 2012); and resource integration between two interacting parties are dependent on the nature of interaction in indirect relationships (Haugnes 2010). The overall contribution of these studies is that they show that in order to understand the seafood industry, you have to look beyond the mere transaction.

4. An analytical device: The ARA-model

Central to the IMP approach to business marketing is the interaction between actors, resources and activities (the ARA model). In this perspective, interaction in business relationships can be defined as the degree to which actors develop and share resources, perform joint activities and build mutual actor bonds. (Håkansson et al. 2009; Håkansson and Snehota 1995). The economic logic behind interaction here is that actors will benefit mutually by sharing and combining resources and activities across firm boundaries, instead of regarding them as internal matters (Dubois 1998; Håkansson and Waluszewski 2002). Resources will be more valuable as they are combined with resources of other actors and activities are performed more efficiently when adapted to the activities of other actors (Gadde 2004; Håkansson and Waluszewski 2002; Jahre et al. 2006). For this to take place there have to prevail strong actor bonds such as trust, mutual understanding, learning and a cooperative atmosphere. This requires some degree of stability and predictability in the connected relationships because mutual investment in resources and activities needs protection and the benefits from increased interaction is also a question of time and long-term commitment and adaptation (Brennan et al. 2003). Additionally, for interaction to develop, there must be some degree of shared understanding between the actors about how resources should be utilised and how activities should be performed across different relationships (Abrahamsen et al. 2011). With limited interaction, the actors have to take it upon themselves to coordinate activities and develop resources, whereas with increased interaction there is a coordination of resource development and activity performance at the network level.

The interplay between actor bonds, activity links and resource ties also means that these three facets of interaction mutually affect each other. Actors' bonds are affected by how resource ties and activity links are connected, and so on. This implies that a change in one of these dimensions, such as the ability to develop resource ties, will affect the other two dimensions. For instance, Håkansson and Snehota (1995, p. 276) argue that "*The availability of resources limits what activities can be carried out and what cannot*". Similarly, "*By controlling the critical resources an actor can gain advantages over other actors. Striving for control of resources is a clear tendency in business networks. The actor bonds—resource ties dimension is principally a matter of resource control or availability*" (p. 280). This interconnectivity further creates tensions between related resources. Håkansson et al. (2009, p. 80) suggest that "*any change intended to produce a positive effect in some resources will also produce negative effects for some other resources in terms of costs, efficiency of effectiveness.*"

The interplay between these three dimensions and the related interactive effects in the network of business relationships is well documented by IMP researchers. However, we know little

about *how different policy perspectives or logics regarding industry organising affect network interaction*. Different logics may create frictions, because behind the logic lies ideas about how the interaction should be organised. We are particularly interested in different perspectives about how the availability of resources is organised.

To address the research question, we present two cases from the seafood industry where the conditions for resource availability vary significantly due to policy regulations. In the pelagic industry, the main resource (mackerel) is a natural product whereas in the salmon industry the main resource (farmed salmon) is an industrial product. The trading of the fish is heavily organised in the pelagic industry, whereas in the salmon industry the fish farms are subject to governmental permits and licenses but there are no restrictions on the trading. We have selected the Japanese export market because this market is a common denominator in both cases. However, although these two seafood products appear side by side at the sushi plate in Japan, they have taken two completely different routes to market and the networks behind are organised differently, ultimately resting on different policy perspectives creating different interaction patterns. We will study this aspect in depth, and compare and contrast the two different networks using the ARA-model before we discuss the interaction effects and policy implications evident.

5. Methodology and research design

4.1. Methodological considerations

Our case study is based on two cases compiled for two different research purposes. The mackerel case is compiled as part of a study undertaken in 2011, funded by the Norwegian Seafood Research Council (Abrahamsen and Håkansson 2014). This study looked at the interaction between Norwegian pelagic exporters and their industrial customers in Norway's main pelagic export markets: Germany, Poland and Russia (herring) and Japan (mackerel). The salmon case is based on interviews undertaken in 2007 as part of a major Norwegian seafood research project (see IMPJ SI edited by Olsen 2012) funded by the Norwegian Research Foundation, where one part of the study looked at the ties between Norwegian salmon exporters and their Japanese customers. Some of the interviews in the salmon case have been used as part of an earlier publication by the authors (Abrahamsen and Håkansson 2012). This raises two methodological challenges. One concerns comparing data collected at different points in time, the other concerns comparing data gathered for different research purposes. Regarding the first

challenge, our impression is that the main characteristics of the industry and customer relationships as described in 2007 are still valid. In 2013, two of the respondents in the salmon case were revisited for a different research purpose, and they confirmed several of the key characteristics of this industry. Regarding the second challenge, both studies have used the same theoretical framework for analysing how customer-supplier relationships are connected in business networks, and the majority of questions in the interview guide are similar (see Appendix 1 for a presentation of the interview guide). This implies that the cases are comparable for the purpose of this paper.

4.2. Data collection

In both cases we used in-depth personal interview as the primary data collection method. We have interviewed one respondent of each company; 15 interviews in total. We also used some additional secondary data in terms of Norwegian export statistics. The companies were identified by discussions with key people in the seafood industry. Respondents were key people at managerial level with good knowledge of their company's operations and relationships to Japanese customers and Norwegian suppliers. Interviews with the Norwegian sample were conducted in Norwegian, and interviews in Japan were conducted mainly in English. On two occasions (Shoitachi and Asai Retail) we used an interpreter. All interviews were taped and later transcribed. The interviews in Norwegian were translated for subsequent content analysis. We interviewed one representative for each company, except for (*) where we conducted group interviews. In these instances a number of people were responsible for the Norwegian/Japanese business operations. The actors in the mackerel sample are presented with their original company names, but in the case text the respondents are referred to only by function ("a Japanese importer", "a Norwegian exporter", etc.) due to confidentiality reasons. In the salmon case, the company names have been altered for the same reasons.

4.3. Data analysis

In order to make the transcripts suitable for data analysis, the data was coded based on different categories inferred by both theory and the empirical material. The first level analysis was aimed at developing a broader understanding of the structure of the network in these two particular industries, including who the main actors were and how they were connected. Here, the empirical data served as a reference for the categories. The second level of analysis was a more detailed investigation of the characteristics of the relationships between the actors, based on categories inferred by both the empirical data and theory. Finally, a third level of analysis of

the interaction was undertaken, mainly with reference to theory (and particularly the ARA-framework). For the salmon case, these steps were done manually, whereas NVivo was used to analyse the mackerel case. Even though the data presented here was collected for different research proposes, we have attempted to use the same level of analysis for this particular paper. We also structure the presentation of the case around some common elements which we hope will aid the clarity of presentation.

4.3. Research sample

4.3.1. Mackerel case sample The pelagic industry in Norway is typically characterised by a few dominant actors, and we have interviewed the four largest mackerel exporters. Japan is the main export market for Norwegian mackerel. China is also a large market for mackerel, but most of this mackerel is processed in China and re-imported to Japan. Norwegian mackerel export to Japan in 2011 was a total of 97.000 tons, of which 55.000 tons were frozen whole mackerel and 42.000 tons were fillets (Norwegian Seafood Export Council 2013). In Japan, the industry is also characterised by a few large actors, but more actors are present compared to the supply side in Norway. Our Japanese sample represents approximately 71.000 tons, around 70 % of mackerel imports from Norway. We have interviewed six importers and processors of mackerel in Japan (see table 1):

Table 1: Mackerel case research sample

Company	Respondent	Description
Pelagia/ Norway Pelagic	Marketing Director	<ul style="list-style-type: none"> Norway Pelagic is the largest actor in Norway, with a turnover of NOK 3.6 billion in 2011. The company, itself a result of several previous mergers in the industry, merged with Egersund Seafood in 2012 to form Pelagia. Main exports are herring and mackerel. No export numbers given, but bought 430.000 tonnes of raw material in 2013.
Nergård	Marketing Director	<ul style="list-style-type: none"> Nergård is the second largest actor in Norway. Owns three modern herring factories in Norway. The company supplies herring and mackerel as well as different types of white fish. Has a 20 % market share, corresponding to 110- 115.000 tons of production, or NOK 1.8-1.9 billion in revenue.
Brødrene Sperre	Sales Manager	<ul style="list-style-type: none"> The company has over 60 years of experience in the pelagic industry. Major exporter of herring and salmon, but also bacalao and white fish. Annual mackerel exports: 26.000 tons of mackerel
Nils Sperre A/S	Sales Director	<ul style="list-style-type: none"> The company was founded in 1923. Produces herring, mackerel, bacalao and white fish. Annual exports: 22.000 tons of mackerel

Kokusai Shoji	Sales Manager	<ul style="list-style-type: none"> • First and foremost a trader with few employees (five) Buys most of their mackerel in Norway, but also buys some from the Netherlands. • Annual mackerel imports: 25.000 tons
Thyms Co. Ltd (*)	Company President + team	<ul style="list-style-type: none"> • Japanese importer of sardines, horse mackerel and herring in addition to mackerel. Mackerel is responsible for most of the turnover. Part of the mackerel is sold for processing in Japan, and part goes for processing in China, Taiwan, Korea and Thailand. Mackerel sold in Japan or re-imported from abroad goes to wholesalers (wholesalers on the traditional fish markets and other intermediaries) and is then sold to retailers and restaurant chains in Japan. • Annual mackerel imports:13.000 tons
Kyokuyo	Purchasing Manager Pelagic	<ul style="list-style-type: none"> • Primarily an importer, has bought Norwegian mackerel since 2006 Buys 65 % of the mackerel from a Norwegian supplier, and the remaining volume is divided between four other Norwegian exporters. Mackerel is processed primarily in China and to some extent in Thailand, and is re-imported to Japan. Large customers are Japanese retail and sushi chains. • Annual mackerel imports: 11.000 tons (2011)
Marubeni	Purchasing Manager	<ul style="list-style-type: none"> • Large <i>keiretsu</i> with traditions dating back to 1858. Primarily a trading company in food, energy, paper and wood products, chemicals, minerals and oil. One subsidiary specialises in seafood Gets 80 % of the mackerel from a Norwegian supplier, and 20 % divided between two others • Annual mackerel imports:10.000 tons
Maruha Nichiro	Marketing Manager	<ul style="list-style-type: none"> • A major Japanese trading house, vertically integrated. Owns the largest wholesaler in Tsukiji fish market 60 % of the mackerel goes for further processing in China, while 40 % goes to Japanese processors. • Annual mackerel imports: 9.000 tons
Kakoren Foods Corp.	Purchasing Manager	<ul style="list-style-type: none"> • Importer, buys mainly from two suppliers. Most of the mackerel is delivered to a reprocessor in Japan that also specialises in mackerel. Delivers to four wholesalers in Japan, including wholesalers at Tsukiji fish market • Annual mackerel imports:2.000 tons
Tsukiji Uoichiba (also called «Toichi»)	Department Manager	<ul style="list-style-type: none"> • One of the seven wholesalers at Tsukiji fish market in Tokyo. Toichi does not import directly from Norway but from importers like Kakoren Foods • Annual mackerel imports: 800 tons

4.3.2. Salmon case sample

In contrast to the mackerel industry, where there are multiple buyers and sellers involved in the purchasing and distribution of the fish, the salmon industry is characterised by fewer actors with closer ties and a higher level of cooperation. The majority of salmon exports is fresh

salmon, whole or filleted. Norwegian salmon farmers also produce a small volume of trout and a small volume of frozen salmon. In 2013, the three largest Norwegian exporters produced 524.000 tons of salmon and trout (Norsk Fiskerinæring 2013) out of 960.000 tons of salmon and 56.000 trout exported in total this year (Norwegian Export Statistics, 2014). Regarding the Japanese market, Norwegian salmon export volumes fell from 70.000 tons in 2002 to 30.000 tons in 2008, and have remained at this level since then. Nevertheless, the sales value has increased significantly because of higher salmon prices, and Japan is still considered an important market for Norwegian salmon. From a Japanese perspective, Norway is the main supplier of fresh salmon. For instance, import volumes of fresh salmon fillets from Norway in 2010 (20.000 tons) was far larger than New Zealand (700 tons), the UK (600 tons) and Canada (230 tons) (UN Comtrade 2015).

In our case, we have chosen to look at the ties between four large actors: Global Salmon (one of the three exporters mentioned above), Bluewater Trading (a large Japanese importer), Shoitachi (a processor) and Asahi Retail (a regional retail chain in the Osaka area). In this case, the names of the companies are anonymised due to confidentiality reasons. Table 2 presents the sample in more detail.

Table 2: Salmon case research sample

Company	Respondent	Description
Global Salmon (*)	Marketing Manager + team	<ul style="list-style-type: none"> Norway's 2nd largest salmon exporter to Japan Global Salmon sees Bluewater Trading as one of two strategic partners in Japan
Bluewater Trading	Marketing Executive	<ul style="list-style-type: none"> One of Japan's largest seafood importers. Global Salmon's customer since 1994. Purchased 3000 tons of Atlantic salmon in 2007, all from Global Salmon. Turnover of 100 million USD (2007)
Shoitachi	Company Manager	<ul style="list-style-type: none"> Well-established processing company in Osaka. It also owns a small restaurant chain. Recently built a new plant with modern production equipment Have made considerable adaptations to meet the changing needs of the supermarkets.
Asahi Retail	Purchasing Manager	<ul style="list-style-type: none"> Asahi Retail is a large supermarket chain with 135 outlets mainly in the Kyoto/Osaka area.

4.4. Case context: Norway and Japan as trading partners

Seafood has long been an important part of the Japanese food culture. The Japanese prefer a varied range of courses and dishes at home, at the office lunch or at the sushi restaurant. Some

of these meals will probably contain salmon or mackerel from Norway. Salmon is used mainly for sushi and sashimi, whereas mackerel is eaten both as sushi and fried or grilled. Japan has a domestic catch of mackerel, but Norwegian mackerel is considered to be of a higher quality because of its high fat content. Likewise, Japan imports smaller volumes of fresh salmon from New Zealand, Scotland and Canada, but Norwegian salmon still has the largest market share. Chilean frozen salmon has found its way to the Japanese market, but Norwegian fresh salmon is still considered best suited for sushi.

Norwegian export relationships go a long way back, and some Norwegian seafood companies have been present in Japan for over 40 years. Today, Japan is Norway's second largest seafood market in Asia (after China) according to Statistics Norway (2012). China is also a large market for mackerel, but most of this mackerel is processed in China and re-imported to Japan. There are currently 41 Norwegian seafood producers listed as exporters to Japan by the Norwegian Seafood Export Council. Seafood exports to Japan fell rapidly from 250.000 tons in 2002 to less than 100.000 tons in 2006. Since then exports increased slowly to around 150.000 tons in 2011. The increase in exports is mainly due to increased volumes of mackerel, whereas salmon volumes have decreased.

5. Case study and analysis of results

In the reporting of the case study, we first look at the how the resources (mackerel and salmon) are made available to the actors in these two networks, and how these resources are used by Japanese consumers. We then describe how the relationships within these two boundaries are organised. Here we give an overview of the distribution network and the roles of the various actors involved. We then present a more detailed analysis of key interaction characteristics. This description is organised around the following themes that became apparent when analysing our data: a) Product quality and control, b) Information and traceability, c) Organisation of purchases, d) Number of actors involved and e) Trust and commitment. Towards the end of the section, we use the ARA model to make a cross-case comparison of the main interaction characteristics.

5.1. The mackerel case

5.1.1. Resource availability

What we commonly refer to as "mackerel" in this case is actually called The North East Atlantic mackerel, spawning in the central North Sea and Skagerrak oceans in May and June. The catch

takes place in the autumn in the northern part of the North Sea, making this the high season for mackerel exports. Japanese buyers are often present in Norway during the catch season. In 2011, the catch of Norwegian mackerel was 207.950 tons (Institute of Marine Research 2012).

The mackerel buyers get their fish through the pelagic auction system. Some mackerel buyers have ownership in fishing vessels, but they still need to get their volumes through the auction. Buyers in this case are large seafood exporters with processing facilities at different locations along the Norwegian coast. Processing mainly involves sorting, gutting and freezing the mackerel in 20 kg. cardboard containers, later to be stored and shipped to Japan by boat. There are five auctions conducted daily. The auctions take place by fishing boats reporting their catch to the auction, and buyers then place their bids on these catches. The auction is a so-called “closed auction system”. This means that the bidders are only allowed one bid on each catch, and the bids from competing buyers are only made available after the auction is ended. There is therefore a tendency to “...*add a little extra*” in the words of one exporter, to secure volume. This system is seen as costly and rigid, but is originally designed to protect the interests of the fishermen. After the auction is over, the prices are made public. The actors spend a lot of time studying and interpreting prices to gain insights in how the prices are determined, and finding an optimal level for the next bid. The auction price is also available to export customers, meaning that these customers always have information about what the exporters have paid for the fish.

5.1.2. The use of mackerel in Japan

Mackerel (*saba* in Japanese) has many uses: 20 % of the mackerel is used fresh (mainly for sushi) and 80 % is processed (i.e. salt, vinegar or oils are added). Norwegian mackerel has the largest share (80 %) of the market for salted mackerel, the remaining 20 % is domestic catch. Mackerel is sold as whole fish or fillets, and is fried or grilled at home or prepared at restaurants. Norwegian mackerel is popular because it has a richer taste compared to Japanese mackerel. This is because it is fatter than the Japanese mackerel, and the taste is located in the fat tissues. Norwegian mackerel is considered to be better suited for frying and grilling. Japanese mackerel on the other hand is thinner and better suited for sushi and sashimi. However, high prices and low Norwegian quotas means that some of the Japanese demand for mackerel has shifted to domestic mackerel.

Japanese consumers are very quality conscious and seafood has played a vital role in Japanese food culture for centuries. In addition to product quality, consumers are concerned with

traceability and information about country of origin. Japanese restaurants and retailers have high quality standards for their suppliers, which means that Japanese importers send their own quality controllers to Norway throughout the mackerel season. This is unique for the Japanese market. Another feature of the Japanese market is that mackerel is increasingly being processed in countries like China, Thailand and Indonesia and then re-imported to Japan. Processing also take place at facilities in Japan. Processing in China and other countries is manual, while processing in Japan is done both manually and by machines. The widespread perception is that fish processed in Japan has a higher quality. Cost, however, is driving this business overseas. There is also a trend in Japan towards larger processing units. A restructuring of this part of the industry is therefore expected.

5.1.3. The mackerel route to market

After the mackerel is bought in Norway, it takes mainly two routes to get to the Japanese market: one way is via processing in China, the other via processing in Japan (fig. 1). According to our respondents, this ratio is 60 % in China and 40 % in Japan. Smaller volumes are additionally processed in Thailand, Vietnam, Taiwan and Korea. The proportion of mackerel processed in China is expected to increase in the future. Processing means that the mackerel is thawed and filleted (in the case of frozen mackerel coming from Norway). The bones are then removed and the fish is salted, spiced or oils and vinegar are added depending on further usage.

After being processed, the mackerel is sold to wholesalers and/or retailers. Some mackerel is also sold to other importers who have contracted larger volumes to their customers than their suppliers in Norway are able to fulfil. Finally, some mackerel is sold directly to wholesalers, retailers and producers without reprocessing.

There is little or no contact between the Norwegian suppliers and actors further on in the distribution network. In some cases, the Japanese importers take customers to Norway, but this is rare. They prefer to deal with the Norwegians themselves. When asked why Japanese food processors, wholesalers and retailers have no direct contact with Norwegian suppliers of mackerel, one Norwegian exporter explains that this has to do with the role traditionally performed by Japanese importers: *"The importers have a strong position in Japan, and it would not be taken lightly if we were to bypass our Japanese importers and deal directly with processors and retailers."* This is verified by a Japanese importer arguing that: *"The Japanese buyers have no knowledge about Norway. They have no knowledge about quality, but we are a experts. It's much easier and cheaper for them to ask us to buy in Norway, instead of them*

sending their own people to Norway and establish a relationship and all of its history." Here the Japanese importers clearly justify their function.

Fig. 1 presents a simplified picture of the mackerel network and the connected actors:

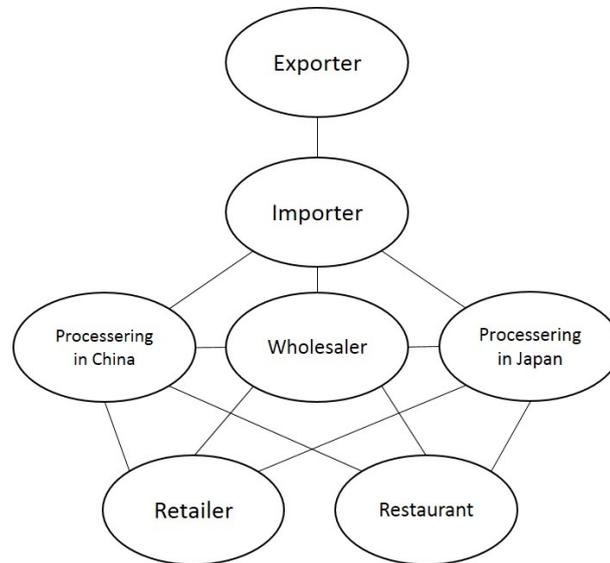


Fig. 1: The mackerel network

Having looked at the way the distribution is organised, we will now look at what characterises the interaction in this network.

5.1.4. Characteristics of the interaction

a) Product quality and control

What is special about the way these relationships are organised, is the large number of customer-driven activities concerned with sorting and quality control. Unlike other pelagic markets such as Germany, Poland and Russia, where importers get pictures of random samples and visit the Norwegian facilities maybe once a year, the Japanese importers have their own inspectors present at the processing facilities throughout the entire season. Their task is to sit ringside when the fishing boats unload mackerel and ensure that the Japanese buyers get the right quality. This is an established practice: One of the inspectors we interviewed has been coming to Ålesund for 24 years!

Each Japanese importer sends its own inspectors. They rarely cooperate with other importers (although informal conversations happen). When asked why importers do not cooperate to a greater extent, one importer says: "*This has to do with competition between the Japanese*

importers and between the Norwegian exporters. We are all competing with each other." It is also important for the inspectors to have knowledge about the various fishing boats because the equipment on board determines the quality. In addition, the inspectors need to know about sizing and grading equipment used at the processing facility.

b) Information and traceability

Japanese restaurants and retail chains are very concerned with traceability and information about product origin. Subsequently, Japanese importers need to be able to document this in negotiations with domestic processors, distributors and retail chains. An importer says: *"The quality of mackerel is very good in Norway. We should not really need to dispatch a person there. But to be sure of the quality and also to be comfortable to sell to our customers in Japan, we need to have somebody there to make inspections and to report back to us."* Despite the fact that the Japanese importers have a well-established relationship with their Norwegian suppliers, this is obviously not enough to reassure their customers: *"Even if we have a long relationship with our supplier, which has been built over many years, our customers cannot rely on our trust in our supplier only. This is difficult to explain to our customer. We cannot say 'We know them, so don't you worry!' That is not possible."*

c) Organisation of purchases

The purchases in Norway are characterised by spot-based contracts (i.e. prices are set for each purchase, not by pre-negotiated arrangements). In some cases, the Norwegian suppliers and their Japanese customers make long-term contracts based on volume, but rarely on price. This practice dates far back, but is also influenced by the particular way the auction system is organised: *"Sometimes we have an agreement that we buy from a given plant at market price. But what is the market price? The market price for them is one level, but the market price for us is a different level. We want to buy as cheap as possible. So we negotiate - sometimes tough negotiations. We have to find a compromise in the middle. We normally know what stock they have. We also follow the auction system. So we can guess their bidding and price structure"*, says one importer. This also has to do with the fluctuations in raw material, according to one exporter: *"It is difficult to make contracts based on price, because this is unknown to us."* The transparency of the auction system creates difficulties for the exporters: *"There are no secrets; they can see what fish is being caught, who is buying what and at what prices. And if they are smart, they can figure out what we have paid and our profit margins. We are very critical of this system. It leaves too much in the open. We would have liked to be in a better bargaining position."*

In most cases, the buyers have orders/customers for their purchases. One importer said that he has as much as 70-75 % pre-ordered, but on many occasions they buy based on speculation. Mackerel may be stored for up to a year without deterioration, so speculation based contracts are one way to secure future deliveries. In some cases, importers speak directly with restaurant chains and retail chains about the quality they want. Based on knowledge of the industry and historical data, they have a good picture of what the future demand will be. In recent years, the price of Norwegian mackerel has increased. This means that the Japanese customers take higher risks when buying on speculation. Norwegian exporters employ much of the same practice. During the catch season they have buyers for the majority of their purchases, whereas towards the end of the season they buy on speculation.

d) Number of actors involved

Several of the importers in our sample buy most of the mackerel from one or a few Norwegian suppliers. There are several reasons for this. Firstly, there are historical reasons—customer relationships go far back in time. Some customer relationships are over 20 years old. Another reason is that there have been several mergers in Norway. This means that customers who dealt with several suppliers now have one main supplier: "*Historically, we did business with several Norwegian suppliers. But they merged and got bigger. Now we buy mainly from one. But we still buy from the same processing plant*", one customer says.

Another important reason is that the customers want to get access to the entire production on a dedicated facility during the fishing season to ensure predictability and volumes: "*They give us one processing plant throughout the season. We can buy from one plant until the end. This is just for us, not for the other importers from Japan. But they sell to other countries like Russia.*" Repeated purchases from the same facilities mean that customers have gained a good understanding of the Norwegian production and are well positioned to select. A Japanese importer says that: "*...The fish is well-graded and the quality is very good. The management of the company is very good and we know them well. The plant has a good reputation in Japan. So we will keep buying from them.*" Given that not all facilities offer this, the Japanese customers must compete for raw materials: "*We are actually competing to get allocations from Norwegian suppliers. There is a competition between us. We would like to have one processing plant through the season along with the other importers. It's quite difficult. When a Japanese importer wants to have access to the production, all of the importers want to have it at the same time. So the Norwegian supplier must make decisions about how to allocate his plant between*

several customers on a day-by-day basis. We don't compete so much for price, as for allocation of resources. We have to secure volume."

At the same time, the Japanese buy more fish than a single facility can deliver, and are thereby dependent on several mackerel suppliers. In addition, they are hard bargainers and can easily shift supplier if they don't agree on price and terms. Having several suppliers provides a good starting point for price negotiations: *"It's risky for us and the other Japanese importers to rely only on one supplier. That's why we want to divide our purchases between several suppliers. We have a main supplier, and if they can give us what we want we will buy from them. But we also buy on spot basis when fish becomes available"*.

e) Trust and commitment

The respondents say that they have a high degree of trust in their Norwegian suppliers. Yet, they prefer to monitor the sorting and quality control of the fish using their own inspectors. Some respondents clearly want to avoid opportunism as they argue that the sellers are motivated to include fish of lesser quality in the deliveries if they are not kept under surveillance. As such, there is still a certain suspicion in customer relationships although the Japanese respondents say they have confidence in their suppliers. As one importer explains: *"Sometimes the seller does not wish to tell us how bad this fish really is. We need to check for ourselves."* Another adds that: *"...In general we trust our supplier. But sometimes the factory tries to change fish. This is very bad. To avoid this we need to send an inspector. If we buy for instance sizes between 400 and 600 grams, they will try to put in fish from 300 to 350 grams. They try to cheat us. Our inspector can then ask the producer to change the lot. The Japanese are very concerned with quality."*

Having looked at key characteristics of the interaction between the various connected actors in the mackerel case, we now turn to the salmon case.

5.2. The salmon case

5.2.1. Resource availability

Norwegian salmon is produced at fish farms along the Norwegian coast. From a modest start in the 1970s, fish farming is now a major industry. This means that farmed salmon is an industrial product; it can be planned and monitored from small fish ("smolt") to mature fish ready for market. The industry is vertically integrated and a small number of large companies control the

market. In fact, five of the ten biggest salmon producers worldwide are Norwegian, out of which Marine Harvest holds the largest production volume (400.000 tons produced in 2014), followed by Lerøy Seafood Group and Cermaq at 150.000 tons each (Sysla.no 2015) (Cermaq was recently bought by Mitsubishi, a large Japanese salmon importer). These actors own fish farms, processing facilities, marketing and sales offices in the main salmon export markets. In addition, one actor has its own fish feed factory.

5.2.2. The Japanese market for salmon

Today, fresh salmon is used mainly for *sushi* or *sashimi* in Japan, but it was not regarded as suitable for sushi at first. Until the beginning of the 1980s, salmon was associated with domestic Japanese wild caught salmon containing parasites, needing cooking or frying in order to be edible. When farmed salmon from Norway was introduced in Japan, it became increasingly popular. Fish farming production methods meant that the quality of salmon could be monitored and controlled using medication in the fish feed. The number of parasites was considerably reduced, making salmon edible raw — perfectly suited for sushi. In many ways, Norwegian salmon started the salmon sushi trend. Another factor contributing to this development was the *sushi-kaiten* restaurants. The *kaiten* is a kind of conveyor belt that transports the sushi around the bar in the restaurant. This innovation made sushi affordable for a larger public and brought sushi closer to the customer. A third contributing factor was that salmon prices fell due to economies of scale in Norwegian production volumes, and more Japanese restaurants put it on the menu. This positive development was aided by a favourable Yen/NOK exchange ratio and prices fell even more, representing a further increase in export volumes.

5.2.3. The salmon route to market

The salmon is first caught at the fish farm. It is then gutted (sometimes also filleted) and put on ice in Styrofoam containers. Fresh salmon is sent to Japan by air on a weekly basis, frozen salmon is shipped by sea in containers. The main salmon export to Japan is nevertheless fresh salmon. Global Salmon was actually the first Norwegian exporter to introduce weekly-chartered flights to Tokyo. Today they send off two shipments per week, mainly their own products. Free space is sometimes sold via an agent in Oslo. Airfreights have become popular because of the demand for fresher salmon in Japan, but it has taken time and effort to establish this practice. Nevertheless, the efficient operations means that a salmon caught in the Norwegian fjord on a Thursday can be served at a Tokyo restaurant table on a Sunday.

In Japan, the fish takes two routes to market (fig. 2): one is the traditional seafood markets such as the *Tsukiji* fish market in Tokyo, traditionally by sea but increasingly by transport from the

airport. Here the fish is sold to primary and secondary (intermediate) wholesalers, processors, fish dealers and retailers. There are about 3800 intermediate wholesalers in Japan, and roughly 900 of these are present at Tsukiji. These intermediate wholesalers are often small, family run companies. Here, the fish is transported to the various destinations by small trucks, lorries and even mopeds. This ensures that the fish is available at the counter or at the restaurant table later in the morning or in the afternoon. The second route to market is direct distribution where large importers trade directly with foreign exporters and have close relationships with processors and retailers. This type of direct distribution is rapidly increasing at the expense of traditional fish market distribution (Abrahamsen and Håkansson 2012), and this distribution pattern is the basis of the current case.

Fig. 2 presents a simplified picture of the salmon network and the connected actors:

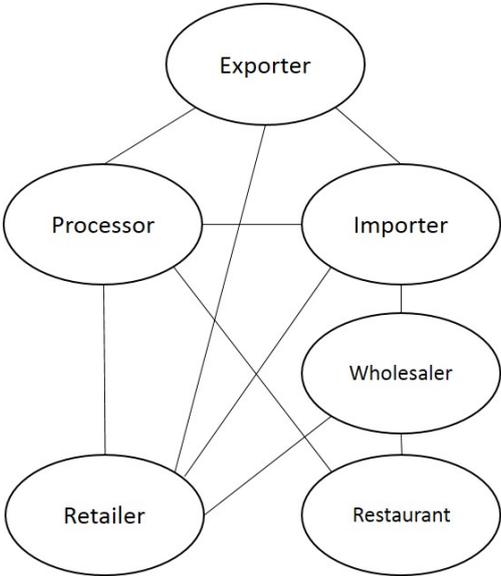


Fig. 2: The salmon network

Having looked at the way the distribution is organised, we will now look at what characterises the interactions in this network.

5.2.4. Characteristics of the interaction

a) Product quality and control

The actors in the salmon network do not describe particular problems regarding product quality as evident in the mackerel case. For them, product quality means traceability and information about product origin. However, as the interaction between these actors is extensive, the Japanese are well informed about these issues. According to Global Salmon, the Norwegian

salmon exporter in this case, *“The main difference in resource ties is that we develop concepts together...These concepts can be regarding packaging, logistics, special product quality, feed mix at the fish farm, category management together with the supermarkets, and menu development with the restaurants. A broad range, actually.”* The respondent at Asahi Retail tells a similar story: *“We have to think about how many pieces of salmon we want to sell in one day, in one week, in month, in one year. So in that sense we want to have a supplier which can maintain the stable quality and supply which enable us to forecast our sales.”*

b) Information and traceability

Japanese customers are very quality conscious, and hence Japanese retailers are concerned about product traceability. This is a key reason for the close relationships between Japanese retailers, importers, processors and Norwegian exporters. For instance, the respondent from the Japanese importer Bluewater says: *“We want to develop close relationships with the exporter and the retailers because we want to increase the traceability of the fish that we sell. The retailers are very concerned about this. The supermarkets demand traceability, safety and trust. So we have to make an effort, assure them that we are doing the right thing.”*

c) Organisation of purchases

The actors in the salmon sample cooperate on a number of areas, such as retail promotions and campaigns. According to Bluewater; *“...Global Salmon supports us in many ways. We have promotion activities together. Global Salmon and The Norwegian Seafood Export Council (NSEC) provide some of the funds for these activities and we share the costs.”* Another example is the relationship between Bluewater and Shoitachi that has enabled tailored processing adapted to the retailers needs: *“I think in case of Shoitachi we are really working closely. We sell to the supermarkets, but every supermarket needs some processing. They cannot buy salmon by the box. They may process some salmon by themselves, but at busy times such as sales campaign, they use Shoitachi.”* Shoitachi has made major adaptations in its production facilities to cater to the increase in their business with Bluewater, Global Salmon and retailers such as Asahi Retail. Shoitachi has recently built a completely new plant which enables easier adaptation to the requirements of the retailers. They have also invested in mobile monitoring technology that enables visitors to see the production process without having to be there physically. Importers and producers also appreciate this way of tracking the process.

Further, by introducing weekly chartered flights, the exporter can guarantee the freshness of the fish. This practice represents a significant increase in volumes in recent years: *“5 years ago*

our import volumes were not so big, and the Japanese salmon market was also very small. I think maybe at that time 5,000 metric tons per year of fresh salmon. But Norway Salmon wanted to increase the number of customers and their market share in Japan. We had a very positive feeling about their people. They were nice and positive and the service was good. So we started to have regular business. As our sales increased Global Salmon needed bigger planes in order to increase the total consignment from 32 metric tons to 40 metric tons which is the maximum”, the Bluewater respondent explains.

d) Number of actors involved

Shoitachi, the Japanese processor, explains that five years ago they started handling Norwegian salmon, and bought from several suppliers. Price was the main issue. Then Shoitachi was introduced to Bluewater Trading and Global Salmon, and saw that there was a great difference between how these two worked compared to others. Gradually volume increased and other customers followed. Similar stories are told by the respondents in Global Salmon and Bluewater. Over time, these actors have become committed to each other, which means that they have omitted other actors: *“We have three companies in Japan that we define as strategic partners. With these three partners we draw on various types of resources”* (Global Salmon), *“We have moved the partnership to a higher level. We have signed an agreement, and now we will buy 100% from Global Salmon”* (Bluewater Trading), *“At this moment, I am only buying from Bluewater. Before that, the fish market system”* (Asahi Retail).

e) Trust and commitment

The actors seem to be strongly committed to each other in this particular network as indicated by the interaction characteristics presented above. The respondent at Bluewater serves as a good example here when he explains that *“We have more direct access to the retailers now and we often meet them. They want to talk to us and we want to talk to them. We know what they want, and they also get the benefit of a quick reply from the Norwegian suppliers. Previously, we didn’t know anything about the end user. The fish market and all its layers prevented access to this kind of information.”* A high level of commitment means that they are in a better position to give better information to the retailers.

5.3. Summary of interaction characteristics

Having presented the main interaction characteristics of these two cases, we can make some comparisons across these two cases using the ARA model (table 3):

Table 3: Interaction characteristics

	Mackerel network	Salmon network
Activity links	<ul style="list-style-type: none"> • Sorting, filleting and storage main activities • Quality control undertaken by Japanese customers at Norwegian facilities • Conflicts about location of activities 	<ul style="list-style-type: none"> • Retail promotion, process re-allocation main activities • Quality control undertaken in Japan • Mutual agreement about location of activities
Resource ties	<ul style="list-style-type: none"> • Mackerel viewed as a typical homogeneous resource • Information exchange • Spot/speculation-based, formal contracts 	<ul style="list-style-type: none"> • Salmon seen as a heterogeneous resource • Information exchange and product development • Long-term, informal contracts
Actor bonds	<ul style="list-style-type: none"> • Exchange based transactions between several actors • Some trust • Suppliers and customers seek to avoid dependency • Little cooperation across connected relationships 	<ul style="list-style-type: none"> • Relational interdependence between few actors • High level of trust and interdependence • Few actors with close cooperation and commitment across network

a) Activity links

In the mackerel network, the main activities are concerned with sorting, filleting and storage, whereas in the salmon case, the main activities are concerned with retail promotion and processing. Another key characteristic of the activity links is that the most important activities in the mackerel case are undertaken in Norway, whereas the main activities in the salmon case are undertaken in Japan. Concerning quality control, this is carried out in Norway by Japanese quality controllers, whereas in the salmon case the actors seem to agree about where the salmon is best processed and filleted; at the fish farm in Norway, at the processing factory in Japan or at the retailer, depending on the demand. In the mackerel case, this appears to be a source of conflict. The Japanese customers do not trust the Norwegians to deliver fish of high quality and they need to have their own inspectors and quality controllers present at the Norwegian facilities.

b) Resource ties

In both cases, the fish is the most important resource. However, the cases differ as to how this resource is perceived. In the mackerel case, the fish is seen as a homogeneous resource and has

few couplings to other resources. This is reflected in the way the resource is exchanged. Here, we find typical examples of spot trading or speculation based contracts, and the auction system serves as a good example of these mechanisms. In the salmon case, the resource ties are structural and involve a range of actors across the network. Here we find examples of more heterogeneous use of this resource, as it is extensively linked to other resources such as fish feed, transportation means, processing equipment and promotion material. The various characteristics of the resource also seem to be utilised to a fuller extent, because several actors are involved in product development. For this to happen, the actors need to be engaged in a long-term perspective, and this is apparent throughout the salmon case. In the mackerel case, the interaction is apparently transaction based.

Information is the other main resource common to these cases, and the most important information is concerned with traceability and country of origin. However, this central resource affects the two networks differently. In the mackerel case, the retailers' need for information means that the Japanese quality controllers must be present at the Norwegian locations, whereas in the salmon case this quality control is undertaken in Japan. This indicates that this resource is not shared in the mackerel network to the same extent as it is in the salmon network. This has an impact on the actors' bonds.

c) **Actor bonds**

The two cases seem to suggest that the actors in the mackerel case seek to avoid dependency, whereas in the salmon case interdependency is the basis for interaction. Hence, the actors' bonds are stronger in the salmon case, and connect actors extensively across the networks. The actors in this case frequently meet and discuss common interests, whereas in the mackerel case the actors are at arm's length. Neither do we find examples of Norwegian exporters meeting Japanese processors and retailers, as exemplified in the salmon case. This means that the potential for conflict is higher in the mackerel case. An example here is the different perspectives on location of activities such as sorting and control.

5.4. Discussion of interaction characteristics

It is clear that there are apparent differences in the interaction patterns, which can be viewed in relation to the way in which resources are available to the network. In the salmon case, the suppliers have integrated ownership and control over production facilities and can determine product quality. Hence, the most important interaction interface between the supplier and

customer appears to be in Japan. Having control of the raw material and volumes, the exporters can dedicate their efforts to maintain and develop interaction with Japanese customers and other connected actors and find new solutions for the way in which the salmon is sold in Japan. Trust is easier to develop because there is little conflict over prices and there is transparency in terms of product origin and quality. This interaction is mainly *customer-directed*, meaning that the main interaction is taking place between the exporters, the importers and the customers. Fig. 3 is an attempt to illustrate this situation: Here we see that the Norwegian exporter, the Japanese exporter and the Japanese customers interact interdependently, and only the Norwegian exporter has access to the input of raw material:

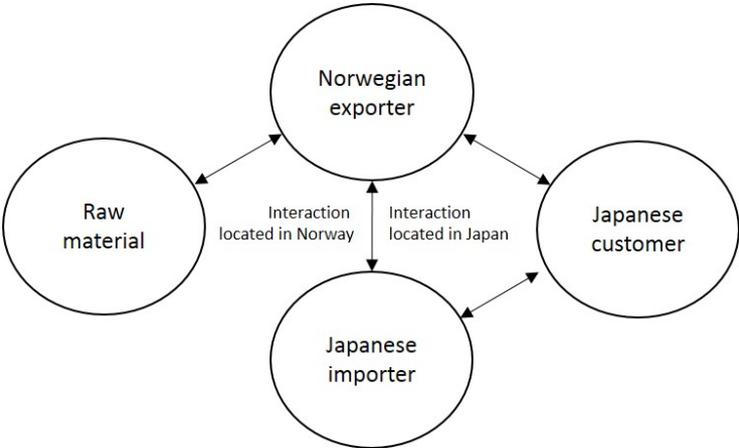


Fig.3: Customer-directed interaction in the salmon network

In the mackerel case however, the suppliers are not at all in control of the raw material. The availability of mackerel fluctuates because of quotas and natural variations in stock, and the auction system means that it is difficult, or even impossible, to ensure a stable supply of raw materials that, for example, developed relationships could have created. The auction system, representing a market-like interaction where the two sides catching and buying mackerel cannot develop their interaction in any substantial way, creates an uncertainty for the Norwegian exporters which in turn affects the way the Japanese customers have to act. Moreover, the Norwegian exporters and the Japanese importers have a lack of possibilities of gaining access to critical information about product quality, price and volume, resulting in difficulties in establishing trust between the parties. Their networking behavior is subsequently directed towards activities aimed at reducing uncertainty and obtaining control of information. Subsequently, the most important interaction interface between suppliers and customers takes

place in Norway, not in Japan. The auction system means that the Japanese have to be present when the fish arrives at the quayside; they take over the role that the Norwegian exporters have in the salmon case. Both the Japanese customers and the Norwegian suppliers direct their main interaction to secure and handle the availability of raw material. As a result, the Norwegian mackerel exporters cannot develop interaction with other connected actors in Japan to the same extent as the salmon exporters. They have to direct their efforts towards trying to solve the input side and make sufficient use of their own production facilities. Furthermore, there are small possibilities to control the variation in qualities or sizes of the fish they buy. The Norwegian companies cannot absorb this variation in inputs, and this situation in turn creates a problem for the Japanese customers who try to handle this as best as they can.

In the mackerel case, the interaction is mainly *supplier-directed*, meaning that the main interaction is taking place between the exporters, the importers and suppliers of raw material. Fig. 4 illustrates this situation. Here the Norwegian exporter and the Japanese importer are mutually involved in the selection of raw material, and only the Japanese importers interact with their domestic customers:

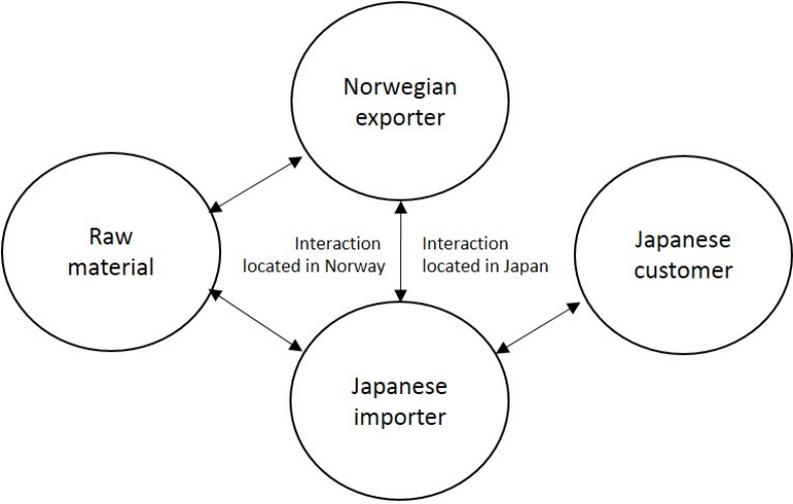


Fig.4: Supplier-directed interaction in the mackerel network

Our results thereby suggest that differing conditions for resource availability has an impact on the *direction of interaction*. One explanation for this is found in the interconnectedness of relationships, a theme that has been central to several IMP studies. This paper also illustrates how actors are *conditioned by their relationships*, another key IMP theme (ibid.). These two cases represent two types of interaction characteristics: In the mackerel case, the interaction is characterised by exchange based transactions, whereas in the salmon case the interaction is

characterised by interdependence and heavy investments in the relationships. These two interaction modes are not deliberate strategies by the actors *per se*, but are results of how the industry is organised. In the pelagic industry, the existence of the auction system and natural variations in quotas means that there is uncertainty regarding price, volume and product quality. Subsequently, most of the concerns of the actors are directed towards reducing this uncertainty. The result is an exchange based, or market-type behavior between a larger number of actors without closer ties. In the salmon farming industry, there is stability and long-term relationships between the parties. Here we find relational and network-type interaction between a small number of interdependent actors. In both these situations we can refer back to how the resource input of the network is organised.

6. Implications for policy

The research question in this paper concerns how different policy perspectives or logics regarding industry organising affect network interaction, with particular focus on how the availability of resources is organised. If we look at table 3 summing up the interaction characteristics in these two cases, there are clear differences in the way the actors interact. An interesting question is then to what extent these differences can be attributed to the different conditions by which the key resource—fish—is made available? Care should be taken when comparing these results as our case study analyses two different seafood industries at different points in time. Nevertheless, the role of governmental policies is central in both cases, and our study suggests that policy shapes the actors' abilities to interact.

In the pelagic and salmon industry alike, the organising of the industry is subject to government regulations, but these policy considerations take different shapes. In both industries, there is a quota system; regulations on catch in the pelagic industry, and regulations on farming licenses in the salmon industry. However, in the pelagic industry there is an additional regulation on how the fish is traded. The logic behind this system reflects microeconomic principles, and thus our paper substantiates Cantillon's (2010) claim that policymakers generally regard fish as a commodity and thus see the trading of fish from a microeconomic viewpoint. Further, as Håkansson et al (2009) claims, the policy principles used to intervene in organising the business landscape, as represented by the auction system in our case, reflect an underlying market logic. Our study also compares to other IMP studies (Bygballe and Ingemansson 2011; Eklund and Waluszewski 2015; Waluszewski 2011; Waluszewski and Wagrell 2013) which implies that policy generally does not reflect the complexity and richness that characterises business

interaction. In our study, we show that policy considerations directed at organising the interaction between certain actors has wider and unintended implications for connected actors, or *destructive network effects*. The government obviously has a clear aim in developing the seafood industry so that it creates greater value for all the actors involved, helping Norway to move away from a resource-based economy. Nevertheless, different policy principles means that the two industries will develop different interaction patterns. In the salmon farming industry, the actors work closely across the network, and the Norwegian exporters are able to direct their attention to users in the end market. In this industry, there are lesser restrictions in the trading of resources and the actors are able to take advantage of network effects. In many ways, this industry reflects an underlying logic associated with network theory. The pelagic industry is organised in a different way, and the actors have to make sub-optimal decisions and each actor has to take it upon himself to coordinate activities and resources. This implies that the pelagic industry will never get to the same situation as the salmon industry because there is differing logic as to how the two industries are organised.

Our study moreover exemplifies the diverse roles that policy has in a network. According to Håkansson et al (2009, p. 254), “*a first policy consequence is that there is no justification for leaving networks to themselves. In contrast, an important role for policy is to develop countervailing forces when the interests of the actors are seriously unbalanced*”. Looking at policy from this angle may shed a different light on the role of the auction system. A clear intention behind the trading system is to balance the power of the fishermen vs. large industrial buyers. The Norwegian pelagic industry is currently facing restructuring, mergers and integration, and the buying side today consists of a small number of large companies. Allowing the pelagic industry to integrate vertically, or “leaving the network to itself” in the words of Håkansson et al., may result in a small number of dominant actors controlling the entire industry, as is the case in the salmon farming industry. A policy, which intervenes in the fish trading to balance the power of buyers and sellers, may therefore be seen as a “countervailing force.”

The policy principles behind the auction system can also be discussed in terms of what Håkansson et al (2009) calls the “dark side of networks”. Network studies often have a positive angle, where capabilities such as cooperation, trust and commitment are viewed as preconditions for networking effectiveness. However, networks also have a darker side, where actors strive to obtain a powerful positions, often at the expense of others (Olsen 2011). Consequently, “...network effects always tend to favour those who have the ability to mobilize

resources, their own and those of others” (Håkansson, 2009, p. 253). This is evident in our case where the Norwegian government, by giving certain privileges to the pelagic auctions, itself becomes an actor that seeks to mobilise its own resources (market control and legislation) and to balance the resources (financial strength and economies of scale) of other actors. Olsen (2011) refers to this as a “power position”, where “it is possible to mobilise the chains of powerful elements associated with a given node in a business network” (Olsen, 2011, p. 104). Yet, as our study shows, this mobilization in one part of the network has unintended consequences for other parts of the network due to the characteristics that networks have, or what we refer to as destructive network effects. In the salmon industry on the other hand, the absence of regulations on resource trading has resulted in large actors such as the Norwegian salmon producers being able to mobilise a range of resources within the limits of their own organisation. Their power is however balanced by large Japanese importers and a growing number of large Japanese retailers. Accordingly, a small number of large actors are able to systematically relate their resources and activities to each other, which in itself is a good example of *constructive network effects*.

7. Conclusion

In this paper, we have studied how different policy perspectives or logics regarding industry organising affect network interaction. Our results indicate that these effects are distinct and important. In one of the cases, Norwegian industrial policy implies interventions and restrictions. Here, policy entails the use of an auction system, which in turn creates a market-type situation prohibiting the development of business relationships. This results in uncertainties about the availability of resources for the Norwegian producers, which in turn affects their ability to supply their Japanese buyers. The interaction is thereby directed towards solving the volume (quantitative) problem in an attempt to reduce the uncertainty created by the unstable and restricted resource supply. In the second case, there are less restrictions in developing relationships for the important raw material. Here the interaction with the Japanese customers is directed towards the customers’ problems in terms of, for example, utilizing qualitative dimensions of the raw material because resource availability is stable and the actors can broaden their scope of interaction.

In the particular networks we have studied, we find that policy considerations play a major role in contributing to these effects. If policy makers view fish as a commodity and see interaction as a market mechanism, the policies designed to facilitate the exchange of resources will be

beneficial for the actors directly involved, but may have unintended negative consequences for indirect relationships. These results gives a very strong policy implication. Whenever developing an industrial policy there are strong reasons for the policy makers to look beyond the single transaction in order to create policies that are effective and/or beneficial for all involved (connected) parties.

References

Abrahamsen, M. H. and Håkansson, H. (2015a), "Caught in the middle: Buying from markets and selling to networks," *Industrial Marketing Management* 49, 4-14.

Abrahamsen, M. H. and Håkansson, H. (2014), "Integrasjon og samarbeid på pelagiske eksportmarkeder," in Research Report Vol. 1: Norwegian Business School.

Abrahamsen, M. H. and Håkansson, H. (2012), "Networks in transition," *IMP Journal*, 6 (3), 194 - 209.

Abrahamsen, M. H. and Håkansson, H. (2015b), "Resource heterogeneity and its effects on interaction and integration in customer-supplier relationships," *IMP Journal*, 9 (1), 5-25.

Abrahamsen, M. H., Naudè, P., and Henneberg, S. C. (2011), "Network change as a battle of ideas? Analysing the interplay between idea structures," *IMP Journal*, 5 (2).

Arndt, J. (1979), "Toward a concept of domesticated markets," *Journal of Marketing*, 43 (4), 69-75.

Asche, F., Flaaten, O., Isaksen, J. R., and Vassdal, T. (2002), "Derived Demand and Relationships between Prices at Different Levels in the Value Chain: a note," *Journal of Agricultural Economics*, 53, 101 - 07.

Brennan, R., Turnbull, P. W., and Wilson, D. T. (2003), "Dyadic adaptation in business-to-business markets," *European Journal of Marketing*, 37 (11/12), 1636-65.

Bygballe, L. E. and Ingemansson, M. (2011), "Public policy and industry views on innovation in construction " *IMP Journal*, 5 (3), 157 - 72.

Cantillon, S. (2010), "The Complexity of Actor Interaction," Doctoral thesis, Norwegian University of Science and Technology.

Cantillon, S. and Håkansson, H. (2009), "Behind The Fish Market Façade," *The IMP Journal*, 3 (1), 50 - 74.

Cantillon, S., Prenkert, F., Håkansson, H., Følgesvold, A., and Haugnes, S. (2006), "The UK seafood network - recent developments and the role of Norwegian exporters," in *Primary industries facing global markets*, F. Asche, ed. Oslo: Universitetsforlaget.

Chandler, A. D. (1977), *The visible hand: The managerial revolution in American Business*. Harvard: Harvard University Press.

Christopher, M. (1992), *Logistics and supply chain management: Strategies for reducing cost and improving services*. London: Financial Times Professional Ltd.

Deacon, D. and Monk, W. (2001), "Quangos and the 'Communications Dependent Society'," *European Journal of Communication*, 16 (1), 25.

Delmas, M. and Terlaak, A. (2002), "The Institutional Context of Environmental Voluntary Agreements," in *Organizations, Policy and the Natural Environment: institutional and strategic perspectives*, A. Hoffman and M. Ventresca, eds. California: Stanford University Press.

Dubois, A. (1998), *Organising industrial activities across firm boundaries*. London: Routledge.

Eklund, M. and Waluszewski, A. (2015), "The diversity of systemic thinking: The underpinnings of NIS and IMP and the different assessment of an industry," *IMP Journal*, 9 (1), 26-45.

Gadde, L.-E. (2004), "Activity coordination and resource combining in distribution networks- Implications for relationship involvement and the relationship atmosphere," *Journal of Marketing Management*, 20 (1/2), 157-84.

Harrison, D. (2012), "Being a networking firm on a day-to-day basis: customer and supplier routines in the Global Fish case," *The IMP Journal*, 6 (3), 267 - 76.

Haugnes, S. (2010), "Consumers in Industrial Networks: a study of the Norwegian-Portuguese bacalhau network," Doctoral thesis, Norwegian Business School.

Hoholm, T. (2012), "Interaction to bridge network gaps. The problem of specialization and innovation in fish technology," *The IMP Journal*, 6 (3).

Holmen, E. and Pedersen, A.-C. (2012), "What is resource heterogeneity, and how can a firm handle the resource heterogeneity encountered in its business relationships? A case of handling heterogeneity of fish farms in outbound logistics of fish feed," *The IMP Journal*, 6 (3), 210 - 39.

Håkansson, H., Ford, D., Gadde, L.-E., Snehota, I., and Waluszewski, A. (2009), *Business in Networks*. Chichester: Wiley.

Håkansson, H. and Snehota, I. (1995), *Developing Relationships in Business Networks*. London: Routledge.

Håkansson, H. and Waluszewski, A. (2002), *Managing Technological Development*. London: Routledge.

Institute of Marine Research (2012), "Marine Research Report."

Jahre, M., Gadde, L., Håkansson, H., Harrison, D., Persson, G., and Liber, G. (2006), *Resourcing in Business Logistics: The Art of Systematic Combining*. Copenhagen: Copenhagen Business School Press.

Jin, D., Kite-Powell, H. L., and Hoagland, P. (2007), "Anticipating the Growth of an Ocean Aquaculture Industry," *Aquaculture Economics and Management*, 11 (3), 225-42.

Laffont, J.-J. and Martimort, D. (2002), *The Theory of Incentives: The Principal-Agent Model*. Princeton and Oxford: Princeton University Press.

Massey, A. (1997), "Management, Politics and Non-Departmental Public Bodies," *Public Money & Management*, 17 (2), 21-25.

Myrland, Ø. and Kinnucan, H. W. (2005), "Generic Advertising in Export Markets: Norwegian Salmon," in *Primary Industries Facing Global Markets: Supply chains and markets for Norwegian food*, F. Asche, ed. Oslo: Universitetsforlaget.

Norges Sildesalgslag (2013), "Annual Report."

Norsk Fiskerinæring (2013), "Norways 50 largest salmon farmers."

Norwegian Ministry of Fisheries and Coastal Affairs (2012), *Facts about Fisheries and Aquaculture* Oslo: Norwegian Ministry of Fisheries and Coastal Affairs.

Norwegian Seafood Export Council (2013), "Seafood Export Statistics."

Olsen, P. I. (2012), "Below the surface: How (seafood) networks work - and how they change," *IMP Journal*, 6 (3), 186-93.

---- (2011), "Knowledge, transparency and power in business networks" *IMP Journal*, 5 (2), 94-106.

Pliatzky, L. (1992), "Quangos and agencies," *Public Administration*, 70 (4), 555-63.

Porter, M. (1998), "Clusters and the new economics of competition," *Harvard Business Review*, November-December Issue.

Rider, S., Hasselberg, Y., and Waluszewski, A. (2013), *Transformations in Research, Higher Education and the Academic Market. The Breakdown of Scientific Thought*. Dordrecht: Springer Science & Business Media.

Rifkind, J. (2011), *The Third Industrial Revolution: How Lateral Power is Transforming Energy, the Economy and the World*: Palgrave Macmillan.

Stern, L. W. and Reve, T. (1980), "Distribution channels as political economies: A framework for comparative analysis," *Journal of Marketing*, 44 (3), 52 - 64.

Sysla.no (2015), "Verdens største lakseoppdrettere," [available at http://www.sysla.no/2015/07/13/havbruk/dette-er-verdens-storste-lakseoppdrettere_54774/].

UN Comtrade (2015), "United Nations Commodity Trade Statistics Database," 2015), [available at <http://comtrade.un.org.ezproxy.library.bi.no/db/default.aspx>].

van Thiel, S. (2004), "Trends in the Public Sector: why politicians prefer quasi-autonomous organizations," *Journal of Theoretical Politics*, 16 (2), 175-201.

Waluszewski, A. (2011), "Rethinking innovation policy," *IMP Journal*, 5 (3), 140-56.

Waluszewski, A. and Wagrell, S. (2013), "Public purchasing policy as innovation killer?," *IMP Journal*, 7 (1), 1 - 11.

Webster, J. F. E. (1992), "The changing role of marketing in the corporation," *Journal of Marketing*, 56 (4), 1.

Wellman, K. F. (1992), "The US retail demand for fish products: an application of the almost ideal demand system," *Applied Economics*, 24 (4), 445.

Williamson, O. E. (1981), "The economics of organisation: The transaction cost approach," *American Journal of Sociology*, 87, 548 - 77.

---- (1975), *Markets and hierarchies. Analysis and antitrust implications*,. New York: The Free Press.