

Market meets network

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Abstract: This paper looks at how a network is affected when the main resource is only available through a transaction-oriented “market” system. Our empirical case is the Norwegian herring industry and its relationships to customers in Germany, Poland and Russia. Our results suggest that these relationships are not developed to their full potential because the Norwegian exporters are dependent on supplies from an auction system characterised by short-term exchange and opportunism, whereas the demands from their European customers suggest close cooperation and involvement. Thus the market system “transcends” through to the surrounding network, meaning that it is difficult to create and maintain high-involvement relationships when interaction in connected relationships is restricted.

Keywords: Markets, networks, relationship involvement, herring, pelagic seafood, Norway, Germany, Poland, Russia

INTRODUCTION

How are direct and indirect customer supplier relationships affected when the most important resources are available only through an exchange system created with a market perspective in mind? What happens when the “Market” meets the “Network”? Such questions have been discussed within the IMP tradition since its basic theoretical foundations in the 1970s, but rarely studied within a single case. The Norwegian herring auction system represents a great opportunity to study this question. In this particular system, the trading of the herring is subjected to a blind auction system by Norwegian law. This system prohibits the establishment long-term relationships between sellers (Norwegian fishermen) and buyers (Norwegian processors and importers) and is created to secure a balance between supply and demand as herring has natural variations in populations and quotas. At the same time, large European retailers have long-term relationships and close cooperation with various seafood producers where herring is used as basis for large product ranges and product varieties. This represents a challenge for the actors involved.

In this paper we briefly present the “market” and “network” perspective and discuss some of the underlying theoretical assumptions. Then we introduce the case. First we present the herring auction system and the rationale for its existence as seen by the actors connected. We then explain how the Norwegian processors and exporters buy herring at the auctions, and how they sell it to their main customers. The largest markets for herring are Germany, Poland and Russia, and we take a closer look at how large actors in these markets interact with their customers. We then move over to a more theoretical discussion where we look at some of the key issues raised in this case. More particularly, we want to discuss in what way the relationships are affected and how the actors seek to resolve this situation.

MARKETS AND NETWORKS: TWO PERSPECTIVES ON ACHIEVING EFFICIENCY

The market perspective

In economic theory the market is traditionally seen as the most efficient way to allocate resources. In the 18th Century Adam Smith argued that a free market will provide a natural balance between supply and demand. The “invisible hand” and competition between the actors will ensure that resources are allocated in such a way that goods are produced in the right quantity and the right price. A century later, neo-classical economists such as Leon Walras and Alfred Marshall arrived at similar conclusions, arguing that price and quantity are determined at an optimal level - an *equilibrium* where there is a perfect match between supply and demand. Preconditions for this equilibrium are 1) perfect competition in the marketplace, 2) taste and preferences are given, 3) full information is available to all actors and 4) there is no time lag between decision and outcome.

These theories have had great impact on the economics and marketing disciplines. In any general textbook in economics or marketing, the coordinating mechanism of the market is highlighted. In microeconomics for instance, Parkin (1997) argues that “A *market is any arrangement that enables buyers and sellers to get information and to do business with each other...*” (Parkin, 1997, p. 18). According to Parkin, markets coordinate individual decisions about price adjustments and decisions coordinated in markets determine what, when and where goods and services are produced and who consumes these goods and services. The

market is therefore a determining facet of our modern economy: *“The U.S. economy relies expensively on the market as a mechanism for coordinating the decisions of individual households and firms”* (Parkin, 1997, p. 20). Similarly, Frank and Bernanke (2004) hold that *“In country after country, markets have replaced centralized control for the simple reason that they tend to assign production tasks and consumption benefits more effectively... There is a great overwhelming agreement among economists...accepting the efficacy of markets as means for allocating society’s scarce resources”* (Frank and Bernanke, 2004, p. 60) This is also reflected in marketing textbooks. Generally, the essence of marketing can be seen as linking buyers and sellers, and balancing price with quantity. As Kotler and Keller (2009) argue *“Marketing is a societal process by which individuals and groups obtain what they need and want though creating, offering and freely exchanging products and services with others.”* (Kotler and Keller, 2009, p. 45).

The neo-classical economics perspective has also had an impact on industrial marketing, where transaction cost economics has been the predominant approach. This approach builds upon the main issues from the neo-classical economies as it is concerned with functions, cost and efficiency. Coase (1937) was perhaps the first to argue that a company would be better off if the cost of performing an activity was lower than buying the same activity in the market. This picture has later been developed by Williamson (Williamson, 1981; 1975) and later Heide (1994). In transaction cost theory, a company will engage in relationships to reduce costs. The main issue is to identify which governance mechanism in customer-supplier relationships that will minimize transactions costs. On one end of the continuum there is a total integration or “hierarchy” of organizations, where ownership gives a certain prerogative and control. On the other end there is a free market where transactions are governed by the market forces (Webster, 1992). Each form of governance has its own costs and the important issue is to choose a system which gives the lowest costs in each case. The principal-agent theory is also central in this picture (Laffont and Martimort, 2002). According to this theory, actors have to trust each other because limited information is available to them (referred to as “bounded rationality”). But actors in a relationship may behave opportunistically, i.e. they may hold back information which is not beneficial to them. Opportunistic behaviour can be reduced if a supplier (principal) can establish mechanisms to exert control over the customer (agent). Such control mechanisms are mainly linked to economic benefits.

The network perspective

The network perspective highlights the need to analyse the management of long-term buyer-seller relationships rather than short term purchasing decisions and transactions. Here, business actors are not seen as separate entities but as interdependent actors in a wider network of interconnected relationships. This perspective challenges the idea of the autonomous company which is the core of micro-economic theory and transaction cost theory, where companies engage in relationships in order to reduce costs and to exert control. The network perspective also differs from the marketing perspective where a company selects a marketing segment and obtains a desired position, and hence develops a product that will attract the attention of potential customers through market communication activities, determine a pricing policy based on forecasted demand, and decide upon a marketing channel that most efficiently transfer the product from manufacturer to end users. In contrast, the network approach sees the customer as being an active part in the development of the relationships. The success of a company may be explained by its ability to develop and handle interconnectedness of its relationships and wider network. This means that a company is not an isolated unit making autonomous decisions; it is linked to the larger environment by its interconnected relationships (Håkansson and Snehota, 1995). As such, the network becomes

both a prison and a tool. It constrains the actors as well as it represents possibilities. The possibilities for a single actor to develop its relationships depend on the wider structure and the performance in one relationship is dependent on other relationship. The resource development takes place between companies, not within them. Efficiency is dependent on external relationships; it is not an internal matter. Relationships are in themselves a resource for the creation of new relationships.

As a brief summary, we may argue that in the market perspective value is created by the coordinating mechanisms in a free market, whereas in the network perspective value is created through long-term relationships between buyers and seller that enables interdependence and transfer of knowledge and resources accumulated over time.

METHODOLOGY

Sample and research design

To get a better understanding of how the Norwegian herring is caught, traded and exported to its main markets, we interviewed Norwegian exporters and their customers in Germany, Poland and Russia. We used a qualitative method design, primarily personal in-depth interviews with selected respondents. Industrial markets are characterised by a few dominant actors and by interviewing representatives from the most dominant actors we get a fairly representative picture of the industry. As seen from table 1, our sample represents a large share of its respective markets (Section 6 presents a detailed overview of the respondents in each export market):

Table 1: Sample of study

Country	Type of respondent	Market share of sample
Norway	Five largest herring exporters and processors Representatives from the auction system	70%
Germany	Six largest agents, importers and processors of herring	50%
Poland	Four largest agents, importers and processors	60%
Russia	Four largest agents, importers and processors	40%

To gain information about key relationships with suppliers and customers, we developed an interview guide. In addition to qualitative methods, we also used secondary data from various sources. The interviews lasted between one and two hours. The interviews were taped and later transcribed. The transcripts were subsequently coded and analysed using NVivo.

Overview of the herring network

Before we present a detailed analysis of the case, a brief overview of the herring network may provide useful (Fig. 1):

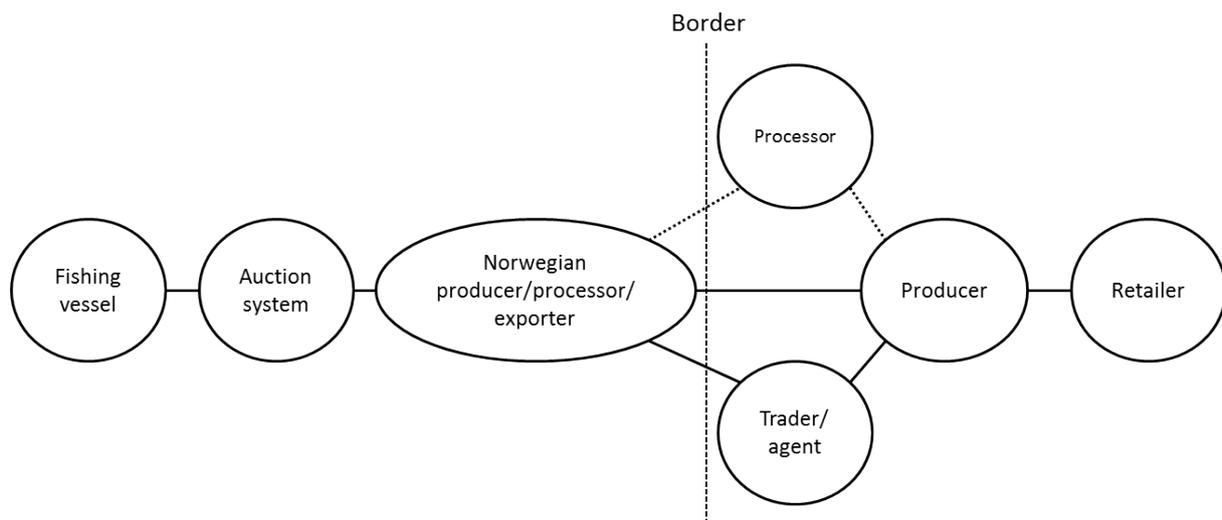


Fig. 1: The herring network

The herring is caught by Norwegian fishing vessels in the North Sea and is bought by Norwegian producers through an auction system. The Norwegian exporters perform simple processing activities such as sorting, filleting and freezing. The herring is then bought by European customers, mainly large producers of a wide range of herring products. Some producers buy via a trader or an importer. The majority of producers have their own processing facilities, but some use external processing. The herring is finally bought by large European retailers.

CREATING A MARKET: THE NORWEGIAN HERRING AUCTION

There are two input factors which affects the availability of herring. The first is annual quotas and natural variations in populations. The other is the auction system for pelagic fish.

Natural variations in herring availability

What is known as Norwegian herring is really two species of herring: Norwegian spring-spawning herring (NVG herring) and North Sea herring. 85 % of all herring caught and exported in Norway is NVG herring (Myrland et al., 2012). Norway has 61 % of the global quota for NVG herring. This was equivalent to 900.000 tons in 2010. In comparison, Iceland has 15,51 %, Russia has 12,82 %, EU has 6,51% and the Faroe Islands have 5,16%. For simplicity, we will refer to both NVG herring and North Sea Herring as “herring” in this paper.

The population of Norwegian herring is stable at a high level after a time in the 1970s and 80s when the herring population was extremely low. The rapid technological development of catching equipment in the 1960s contributed greatly to this situation. The herring’s migration patterns between spawning grounds and feeding areas in North Sea subsequently changed, and the herring stayed off the Norwegian coast for long periods in the 1970s and 1980s. Since 1990 the herring has started to return to the North Sea (Institute of Marine Research, 2012), but the quotas are still relatively low and were down to 377.590 tons in 2013 (Kystmagasinet,

2013). The population would actually tolerate a higher catch, but the authorities are still reluctant to increase the quotas. This means that the fishing vessels are catching less fish which in turn increases prices. Several of the receiving facilities along the Norwegian coast base their activities on large volumes and require a steady supply of raw material. Changes in quotas from year to year is frustrating for the industry and leave little room for long-term planning. As one Norwegian exporter says: *"In 2009 Norway had a herring quota of 1.500.000 tons. Next year, the total herring quota was 800,000 tons of which Norway's part amounted to 500,000 tons. The quota has thus been halved in only two or three years."* Looking ahead the producers believe that the quotas will be further reduced, resulting in production overcapacity and price pressure. One respondent says: *"This is a big problem and it will get even worse in the future. We compete all the time for the raw material which is out there. We need strong financial reserves."*

The auction system

In Norway, all pelagic fish caught by Norwegian vessels must be sold through the Norwegian Fishermen's Sales organisation for pelagic fish (Norges Sildesalgslag or NSS). Dating back to 1927, it is today *"the world's largest marketplace for pelagic fish"* according to their webpage. The NSS is owned and operated by the catch-side, i.e. the fishermen. It is nationwide, self-financed, and also acts as a public body by Norwegian legislation regarding marketing of raw fish and wild marine resources. The trade is managed through a closed auction system. Five auctions are conducted daily. The auctions take place by fishing boats reporting their catches to the auction, giving details of vessel position, species, quantities, sizes and bidding areas. The buyers can then place bid on these catches. The prices are made public at the end of the auction. Buyers in this case are the receiving facilities at different locations along the Norwegian coast. These buyers are large industrial actors which receive, sort, process and export herring to customers in Europe. As can be seen from table 1, the five largest actors represent 70% of the volumes.

The NSS presents several arguments for their importance as a marketplace; it represents a cost-effective marketplace open all year round, it creates a "fair price", it represents security for the fishermen as it handles payment and determines a minimum price and it manages quotas and stock for the government (Norges Sildesalgslag, 2013). It argues that it conducts *"...sales at current market value, it provides the fishermen sales and the buyers raw material, it minimises total sales expenses, it attracts all players to one trading centre efficiently, inexpensively and effectively, it gathers all information and sales data to be made available quickly, simultaneously and equally"* (Norges Sildesalgslag, 2014). This perspective is also highlighted in an interview with a key representative at NSS as part of this project: *"This is a very rational system. It is a gigantic marketplace, where sellers and buyers meet. Buyers will get their herring if they are willing to pay for it, and the auction reflects the market price... This system is actually created to protect the fishermen in their dealings with the large industrial buyers. The fishermen are of course interested in getting the highest price as possible. But no-one is of course interested in buying the fish if it becomes too expensive. This means that the system is self-regulatory."*

To give an idea of the volume traded at the NSS auctions, around 2 million tons of pelagic fish (herring, mackerel, blue whiting and capelin) were traded in 2013, worth between 750 – 1000 million EUR (Norges Sildesalgslag, 2013). As for herring, the NSS received 664.000 tons in 2011, of which 654.000 tons were caught by Norwegian fishing vessels (Pelagisk Forening, 2011). This difference in volume indicates that a small number of foreign vessels also sell their catch in Norway.

No integration between catch side and production side

In addition to the trade regulations, Norwegian law also prevents the production side from integrating vertically with the catch side. It is prohibited for a Norwegian production facility to own more than 49 % of a fishing vessel. The fishing boats in Norway are owned by large ship-owners and smaller shipping companies which operate two to three fishing boats. There is also an increasing concentration in this industry. The 30 biggest shipping companies represented 34.5 % of the total catch value for Norwegian fishing boats in 2012, worth a total of 4.9 billion NOK. Of these shipping companies 16 are involved in pelagic fishing (Norsk Fiskerinæring, 2013). According to one of our respondents, around 70 to 80 families control all fishing in Norway. Since the 1970s, the fishing fleet has been reduced by 60 % (Pelagisk Forening, 2011). One respondent explains that “...when you think of a fisherman, you imagine some old guy with boots and raingear going to sea in the morning in a small fishingboat. But it is not like that at all. Fishingboats are owned by major shipping companies and big business.”

Evidently, this particular system is designed to facilitate free exchange of resources in the marketplace, and the actors are prohibited to create ties beyond the mere exchange. How does this influence the wider network of relationships?

MARKET MEETS NETWORK: THE POSITION OF THE NORWEGIAN PELAGIC INDUSTRY

Our results suggest that the Norwegian pelagic producers are frustrated with the auction system. This is because they are caught in between two economic systems: One the one hand they have to get their resources in a market place at a high cost where no ties beyond the mere transaction are allowed. One the other hand they have customers who expect long-term relationships. We will look at this in more detail.

Overcapacity and price pressure

The pelagic industry in Norway has been characterized by recent mergers and restructuring. Several receiving facilities have closed down. Today, there are five actors/groups that dominate the market (See table 2. Note that after the data were collected, Egersund Seafood and Norway Pelagic merged, further increasing the industry concentration):

Table 2: Norwegian actors and production volumes (based on interviews in the study).

Company	Annual production (tons)
Brødrene Sperre	22,000 herring 26,000 mackerel
Nils Sperre A/S	25,000 herring 22,000 mackerel
Nergård	110- 115,000 herring
Egersund Seafood	Not stated (around 15 % market share)
Norway Pelagic	Not stated

These companies receive, sort, process, freeze and sell the fish to their customers in the main export markets. In this paper the terms “exporter” and “producer” and “receiving facility” interchangeably. Several of our respondents predict that the number of participants will be further reduced. One major actor says that: “*In essence, there is a huge overcapacity. It means that the fishermen get well paid. This is even more apparent now as quotas are down. We may*

even see bankruptcies." Overcapacity and reduced quotas means that exporters have a strong focus on getting raw materials such as herring: *"When there is considerable excess capacity on land, there is a struggle for raw materials. Our production facility is closed two thirds of the year. These are expensive machines, large investments. We should have better margins during the catch season, but we have a problem here."* Excess capacity means that there are many buyers at the auctions which increase the price. And with reduced quotas, the price increase even further: *"This is about supply and demand. When supply falls sharply, as it does now, prices will go up"*, one exporter explains.

The auction system only favours the supply side

The Norwegian producers argue that the fishermen take too much of the value and the system needs to change: *"The monopoly system we have is unfortunate; we need to be able to make more long-term agreements with the catch side and become more integrated. This is a system that fights the market forces, and that can't work in the long run. The economic forces must be allowed to work. The way the system is now, it maximises the value on the supply side. The fishermen must of course have the right to a certain quota, but they do not own the fish in the sea!"* (Norwegian exporter). Interestingly, here he sees the auction system not as a free market as it was intended, but as a monopolistic system which limits the trade.

The auction system is designed in such a way that it further drives prices because buyers do not see bids from other buyers. It is therefore tempting to "add a little extra", in the words of an exporter, to secure volume for their production facility and customers: *"We aim to pay as little as possible. But it's a bad feeling when it turns out that you paid one million kroner more than you need to at the end of the day when the bids are made public, knowing that if you bid less you would have got the same volume of fish. And then you turn off the computer and go to bed. You don't always fall asleep right away, trust me!"* The auction system has some transparency, because prices are made available after the auction. The actors spend a lot of time studying and interpreting price movements based on the different types of fish which is traded. The auction price is also available to export customers, meaning that these customers always have an overview of what the receiving facility has paid for the fish. The exporters are thereby losing a strong bargaining position from their point of view.

Export customers expect long-term agreements

Norwegian exporters are facing strong price pressure from their European customers, who in turn are experiencing similar pressure from their domestic retail customers. The exporters have annual or long-term delivery contract with their European buyers, mainly concerning quality and quantity. The exporters are reluctant to get into long-term agreements on price, because this fluctuates. But the problem is that the European buyers often have fixed price agreements with their retail customers, and this creates heavy pressure on the relationships formed with their Norwegian suppliers. This puts a strain on their relations. One Norwegian respondent says: *"Our customers have challenges delivering to the supermarket chains. These chains are keen to secure volume. Herring has long been an affordable product with high volume and low prices. But when prices increase customers in Eastern Europe, Germany and Poland with long-term agreements with the supermarkets are facing a challenge. Their retail customers are few and strong and the contracts they have, which run for 3-6 months, are difficult to adjust."*

Access to raw materials is unstable and seasonal. This means that it is difficult to plan and to enter into long-term agreements for the exporters: *"The fishing industry is the only industry in the world where access to raw materials varies so much from day to day due to quotas and*

weather. And then we have the special situation of the auction system." This means that there is hectic activity in the production facilities at the time where the herring is caught, but there may also be quiet periods. Several facilities therefore receive different fish species that have different catch periods. Catch periods for mackerel are for example different from herring. Production facilities can thereby attain a steady production level.

MARKET MEETS NETWORK: THE POSITION OF THE EUROPEAN CUSTOMERS

The main production activities performed in Norway are sorting, filleting and freezing of herring. Some markets want fillets, others want frozen whole fish. Processing beyond sorting, filleting and freezing is expensive and impractical due to the Norwegian customs barriers. Norwegian fish which is processed further, for instance adding salt or vinegar, is subject to a 20 % customs duty into the European Union. Weight and transport costs makes processing in Norway expensive: *"We cannot rule out processing in Norway, but this is expensive and we have no culture for it. Denmark, Germany and Poland have long traditions and know what the market wants. This will also drive up transport costs because water and glass adds weight"*, a Norwegian exporter argues. All markets have different traditions and food cultures. Northern countries prefer salted fish because Norway has historically had access to salt. In southern European countries, vinegar and oil is used because of their long tradition of winemaking.

According to Norwegian export statistics (Norwegian Seafood Export Council, 2013) the largest market for Norwegian herring fillets is Germany, with Russia and Poland in second and third place. We will now deal with these in turn.

Germany

Germany is in many ways the most developed and the most established market for Norwegian exporters. It has for a long time been a fillet market, and many German producers have made great advances in product development and processing of herring. The German market is characterised by a small number of large and dominant actors.

Table 3: Respondents in Germany and their share of herring imports

Company	Annual total herring import (tons)	Import from Norway (tons)
Fokken & Müller	Not stated	3,000
Friedrichs	250-200	Not stated
Friesenkroner	6,000	3,500
Hawesta	Not stated	16,000
Homan	Not stated	25,000 – 30,000
Lübbert	Not stated	Not stated

Germany: Relationships to the Norwegian suppliers

German customers have developed long-term relationships with a limited number of Norwegian suppliers. They generally buy large volumes and do not want to be dependent on one supplier.

The German customers are frustrated with the auction system: *"Norway has a complicated system of selling the fish to the industry. It's a monopolized system. This gives us a lot of*

headache, and especially our customers. It is a rather difficult system to understand. You can give one bid and that is your chance. For the fisherman it's obviously good – but for the industry it's very bad. The industry in Norway is losing money, and there is overcapacity. They need work, and they need raw material. What we then see is what I call speculation – paying high prices, and selling to whoever wants to buy. Not just Germany – maybe Russia or anywhere in the world. They don't listen to their customers.” Here he points to an interesting consequence of the auction system – Norwegian suppliers are forced to sell their fish to the highest bidder, disregarding established relationship with other buyers who cannot afford to pay as much. This is a major concern for this German importer: *“We often discuss how we can improve the system. Norway should be more flexible, not just compete for resources and pay ridiculous prices. In the end we all lose money. It's crazy. It is simply driven by fear. And a system driven by fear is never good. You have to establish a system where you give all members in a value chain a chance to make money.”* This makes it difficult for German factories to plan their production. According to another supplier: *“When the catch season starts in September/October, the herring is really big. This is the right size for East-European markets like Russia and Ukraine. The fishermen are therefore interested in catching the big sized herring because they get higher prices. But this is not what the German market needs, we need smaller sizes. Sometimes the fishermen know where the small herring is, but they don't want to catch it because they get more money for the big herring. And as the quota is reduced, herring size will increase even more. When they are finished supplying to the Eastern European market, there is not much left for Germany and Poland. This means high pressure on the rest of the quota for our kind of products. And higher prices.”* (German importer). Another respondent says: *“They don't give a damn shit! It is a perfect system for Norwegians. First, the Russian will get their fish, then the Poles, and then the Germans. Nobody thinks about our market.”* This is also a concern for other importers: *“Bigger sized herring gets higher prices. So when the Norwegian fishermen have a chance to find it they catch it. For the fisherman it doesn't matter – they get rid of the product anyhow. Big sized herring ends up in Russia or Nigeria, they will surely pay. This is a problem”* (German importer).

Germany: Relationships to the domestic buyers

The Norwegian auction system creates a pressure on the relationship between the German customers and their domestic customers. The system is seen as rigid and costly. This system comes in addition to reduced quotas, and this means that many producers are squeezed in relation to their retail customers: *“In 2011 and 2012 there were very low herring quotas. Suddenly, you had much less raw material. But the demand is there. We pay too much, and our German customers are not willing to pay more. Then you lose money. We lost money in 2011 and the first half of 2012.”* (German importer). Another importer explains: *“What I don't understand, is why Norway has a system that creates added value only for the fishermen? And not for the rest? We are not happy in the fish industry at the moment. There are only two players in the whole chain earning money: the fishermen and the retailers. But our business is to make value added products from the fish and sell it to retailers and consumers. We have been in red for a while, but have small profits now.”* (German importer). As a consequence, one German producer is discussing moving production into other product ranges such as chicken and salads where the supply is more predictable.

Poland

Herring has been an important part of Polish food culture since the medieval times. Poland has traditionally been a market for whole frozen herring, but is now starting to becoming more developed into a fillet market. Most Norwegian exporters have a smaller number of large Polish customers. Although the Polish market is characterised by a large product range, there is currently little innovation beyond various additions of flavours, spices and preservatives. However, many actors in the industry believe that we will see increasing levels of innovation in the future.

There are several factories producing herring in Poland. Most of the factories are small family-run companies producing for local markets with locally customised product variants. There are only a few factories producing herring products on a large scale such as canned products, herring fillets in sauce and brine, and herring salads. Here we find mainly two types of companies: one type is publicly listed companies on the Warsaw Stock Exchange such as Wilbo, Seko and Graal. These produce for the Polish market and for export. The second type is foreign owned companies like Lisner, Rieber Foods and ZMK Delikates. These mainly re-export to foreign markets, primarily to Germany

Table 4: Respondents in Poland

Company	Annual total import of herring (tons)	Market share
Graal Gruppen	6,000	20 %
Seko	5,000	20 %
Contimax	4,000 – 6,000	15-20 %
Wilbo	Not stated	Not stated

Poland: Relationships to the Norwegian suppliers

As is the case in Germany, the Polish customers want several suppliers to deal with. Contimax, for example, has four Norwegian suppliers and also buys from Iceland. Graal has several Icelandic and Norwegian suppliers. Seko has three Norwegian suppliers, three Icelandic suppliers, one Danish supplier and one German supplier. These relationships are relatively stable. Two of Contimax's customer relationships have lasted for over 10 years. For Seko, all the relationships have lasted for over 10 years, and they have had the same suppliers since starting in 1992. Wilbo says that they want to have multiple suppliers available because no supplier alone can guarantee large enough volumes.

The Polish customers buy herring throughout the year, but the volume varies with season and production capacity. The herring is purchased for immediate use in the production of most herring products. But for canned products, herring for is bought for storage to ensure constant production.

The relationships are characterised by standard repurchases and to a lesser extent mutual adaptations. There are few people involved on both sides. Contimax, for example, has one person who is responsible for strategic purchasing. The contracts are short and never longer than a year at a time. Contimax has regular contact with their suppliers by phone and meet them occasionally in person. Graal has a centralised procurement system that handles contracts with suppliers for all companies in the Graal group. Seko has standard relationships with their suppliers. Deliveries are based on their demand and when the warehouse for herring begins to empty. Deliveries rarely exceed 200 tons. Graal regularly talks with their Norwegian

suppliers on the phone, especially during the season. The content of these conversations revolves around availability and price information. Physical meetings are less frequent.

The relationships between Polish customers and their Norwegian suppliers are characterised by trust and long-term planning in the sense that the parties are mutually dependent on each other for access to raw materials and access to the market. Contimax says that they have a good relationship with their Norwegian suppliers. This was particularly important at a time when there was little herring to obtain and many smaller producers had problems with raw material supply. Contimax avoided this because they had good relations with Norwegian suppliers. Graal has collaborated with Norwegian suppliers of MSC labelling for their herring products. Suppliers and customers also collaborate on insurance, storage and transportation.

But beyond this, there is little adaption between the parties. Respondents used terms like "normal contracts" and "standard contracts" to explain the operation. One respondent said that "no common project, only trade activities" is the nature their relationship.

Poland: Relationships to domestic buyers

Under the Communist rule herring was popular because of low prices and a limited supply of other fish species, and herring was often consumed with vodka. Eventually, herring has gained competition from other species, quotas are reduced, herring has become relatively more expensive compared to other species, and alcohol consumption has changed in favour of beer and wine. Herring consumption has therefore declined during the last 10 years.

Traditionally, herring has been sold by fishmonger and small independent stores. However, also in Poland we see a trend towards larger chains and supermarkets. The percentage of sales is expected to rise sharply in the future. This picture is also consistent if we look at the actors individually. Graal sells 78 % of its production directly to supermarkets and hypermarkets. 16 % of the production goes to fishmongers, and 6 % is exported. Seko delivers 44 % of its production to supermarkets and retail chains in Poland but also Germany (Lidl and Kaufland). 33 % of SEKO's production goes to smaller wholesalers.

Russia

Russia has long been an important market for Norwegian herring, and exports of Norwegian seafood to Russia have increased heavily since the dissolution of the Soviet Union in 1991. According to the Norwegian Seafood Council, Russia is today the second largest export market for herring. Russia is traditionally a market for frozen whole fish. In Russia, both industrial customers and agents buy fish. Industrial customers buy fillets while traders buy frozen whole fish. Traditionally there have been many small actors in Russia, but this market is also characterised by concentration. Today there are 5-6 large companies, according to respondents. We have interviewed four firms in Russia: ROK and DEFA Group in St. Petersburg, and Russian Sea and Atlantic Pacific in Moscow. All four are big actors in the Russian seafood industry. Atlantic Pacific and Defa are traders and import for resale, while Russian Sea and ROK import for own production (Table 5):

Table 5: Respondents in Russia

Company	Annual total import of herring (tons)	Market share
ROK	3,000 – 4,000 tons	Not stated
DEFA Group	Not stated	12 – 14 %
Russian Sea	Not stated	Not stated
Atlant Pacific	Not stated	9 %

Russia: Relationships to Norwegian suppliers

One respondent explains that although Norwegian herring is considered to be of high quality, increased prices and low quotas mean that he now considers the quality of herring from other importing countries just as attractive: *"A couple of years ago Norway had 99 % of the market. Now they have only 40 % with our company. The Norwegian quotas have been reduced and the prices have increased. We had to look for alternatives. Before we weren't so sure about the quality of the fish from countries like Scotland and Ireland, but we have started to reconsider the quality. From 2010 Iceland and the Faroes started to be very active and their market share have increased. Volumes from Norway have declined. Norway used to be a loyal and stable supplier, but things have changed. Now Iceland, Scotland, Ireland and the Faroe Islands are becoming very strong partners."*

Norwegian herring also faces competition from Russia's domestic herring catch. Russian quotas include Pacific herring, Baltic herring and North Sea herring. In 2012, Russian catches of herring amounted to just under 500,000 tons of the total Russian catch of 4.3 million tons (USDA Foreign Agricultural Service, 2012). After a sharp decline at the start of the 1990s, the Russian catch is steadily increasing. Our interviews indicate however that Russian herring cannot be directly substituted with imported herring. This is because imported herring is considered to have higher quality than the Russian. But Russian herring is the cheapest, both for importers and Russian consumers. One of our Russian respondents explains: *"Russia is a quite a different market. Our suppliers are often trying to compare us to the European markets, but these markets are not the same as in Russia. Europeans can pay higher prices for the fish, we can't. Norwegian exporters are also facing competition from the Russian fishing fleet. The fish caught by the Russian fleet is much cheaper than the imported one, but the quality is lower. Still, the last two years our customers are turning to Russian fish because price is becoming more important than quality. All our Norwegian and other suppliers know about this problem. We tell about them every day – they should change their pricing policies."* This leads to uncertain prospects for Norwegian herring in Russia: *"If the prices for imports continue to grow, and the prices in the local markets continue to fall, there will be no future for imported Norwegian pelagic fish in Russia."*

Price is an important supplier criterion. Russian importers are just as concerned with loyalty and predictability, but the price of Norwegian herring clearly has an impact on demand. A higher price is one explanation for the reduced Norwegian exports. The Russians believe that this is due to high prices of raw materials in Norway. They keep a close eye on the Norwegian auction system and are well informed of developments in the Norwegian pelagic industry: *"If they want to create value for us, the only option the suppliers have is not to pay such high prices for raw material. They should change the pricing in the auction system. Last season the producers were fighting for raw material because the quotas were reduced and a lot of plants were suffering. And they were fighting for raw materials and paying higher and higher prices in the auction. If they manage to coordinate their purchases from the auctions and keep the prices down, they will be able to compete with the Faroes."*

Another importer explains that the auction system makes it difficult to keep trading herring in Norway: *"The auction system in Norway is one of the reasons we do not like to work with Norway. We are working with Ireland because they have no auctions. Their prices are more competitive."*

Russia: Relationships to domestic buyers

Russian importers supply domestic producers, processors, wholesalers and retailers. For Atlantic Pacific, producers and processors amount to 80 % of sales and 20 % of sales are to wholesalers. Atlantic Pacific has more than 1,000 customers throughout the country. DEFA sells to all the actors mentioned above, but most of the fish is sold to producers and processors. ROK sell most of its production directly to supermarket chains. They have five major retail chains as customers. They also sell to wholesalers and smaller shops, but this volume is small. ROK is in close dialogue with grocery chains in terms of product development, quality, size, etc., and much of this information is given to their Norwegian suppliers. Together, they must find ways to meet retail chain requirements such as fillet size and setting of fillet machines.

The Norwegian auction system, and the consequences this has for the pricing of pelagic fish, affects several of the customer relationships studied. One respondent explains: *"The Norwegian auction system is a problem. In Russia we have a clear picture of what our final consumer is willing to pay. We give this information to our supplier, but he can't do anything with this unless he is willing to sell below his profit level. They buy at a high level in the auctions. For instance, the Norwegian fishermen sell the herring for 5\$. The Norwegian exporter needs to make a profit and he wants 7\$ from us. But we can't sell above 4\$, or our consumer will buy tuna instead. In the end only the fishermen wins and the producers in Norway lose. An open market would be ideal – just like what is happening in markets all over the world."*

DISCUSSION

The following table presents a summary of the interaction processes characterising the relationships described in the section above (table 6):

Table 6: Relationship characteristics

Relationship between actors	Catchside/auction – Norwegian exporter	Norwegian exporter – domestic importer	Domestic importer – domestic customer
Characteristics of the interaction process	<ul style="list-style-type: none"> • Routine-based transactions • No cooperation apart from the exchange • Resources subject to seasonal variety and quotas • Activity links limited to information exchange • No resource ties • Conflicts about nature of the exchange and the role of the auction system 	<ul style="list-style-type: none"> • Limited adaptations • Annual negotiations on quality and quantity • Long-term relationships with a limited number of buyers, but both parties avoid dependency • Simple activity links such as sorting, fileting, freezing, storage and transportation • Opportunism in terms of selling selected qualities to the highest bidder • Resource ties in terms of knowledge transfer' • Conflicts about pricemargins and resource availability (herring auction) 	<ul style="list-style-type: none"> • Long-term relationships • Mutual interdependence and adaptations • Annual negotiations on price, quality and quantity • Extensive resource ties such as product development and branding • Activity links in terms of information exchange, storage systems, etc.
Relationship characteristic	Low-involvement	Semi-involvement	High-involvement

Here we can identify three distinct interaction patterns. The relationship between the Norwegian exporters and the catchside/auction system takes the form of routine-based transactions and limited cooperation between the actors apart from the mere exchange process. This is a particular characteristic for **low-involvement relationships** or arms-length relationships (Ford et al., 2011) where each purchase is viewed in isolation and the price is the main determinant, and where *“no specific product or service adaptations are made, thus minimising the resource ties. Activity links are weak owing to standardised processing and shipments, ... interaction between individuals are restricted in the two companies are restricted to sales and purchasing administration, implying few and limited actor bonds”* (Ford et al., 2011, p. 79). All these facets are good characteristics of what we find in these particular relationships between Norwegian exporters and the catch side.

At the other end, the relationships between the domestic importers and their customers seem to be what Ford et al (2011) characterises as **high-involvement relationships**. In this kind of relationships the parties rely on the resources from their suppliers, their activities have to be coordinated, and the parties are interdependent. Suppliers are not easily switched. This is to a large extent characteristic for the relationships between the exporters and importers in our study because many domestic importers have gone to great lengths in order to accommodate the specifications from their domestic retail customers. Contracts are long-term, but are negotiated annually.

In the middle we find the relationships between the Norwegian exporters and the domestic customers which we can term as **semi-involvement relationships**. These relationships have both characteristics of high and low-involvement: The parties seek to avoid dependency and interdependence, the interaction is mainly related to the exchange process and the resources and activities involved. But at the same time the interaction is restricted to the same buyers which have learned to know each other after many years of doing business together. These relationships are subject to tension and conflicts, because the interaction is not extended to its full potential. Let us look at this situation in more detail.

At one part of the network, large European retailers have high-involvement relationships and close cooperation with various domestic producers where herring is used as basis for extensive product ranges and varieties due to increased consumer requirements and developments in the various domestic seafood markets. There is obviously a great potential for extending these interaction patterns to the relationships between the domestic importers and their Norwegian suppliers. The domestic importers have close ties to and knowledge of the demands of large European retailers, and the Norwegian suppliers have access to the most important resource demanded. But the potential for extended interaction is hindered by the way in which the most important resource (herring) is made available to the network, and the subsequent low-involvement relationships Norwegian exporters have to the fishing vessels. The exporters obtain their resources from an auction system where price is the main determinant, and suppliers are motivated to behave opportunistically and sell their herring to the highest bidder. It becomes difficult for the exporters and their buyers to engage in high-involvement relationships although the potential is present. This further means that the European buyers have a problem fulfilling their obligations to their retailer customers. This suggests the market system creates “spillover effects” to the surrounding network, meaning that it is difficult to create and maintain high-involvement relationships when interaction in connected relationships is limited.

The auction system is created to ensure efficiency. But our study suggests that this system does not create efficiency on the network level as it only favours one actor. Further, there is

no coordination mechanism at network level because each actor has to undertake the coordination mechanism to create value for himself and his close counterparts. One may therefore question whether this system is optimal for achieving efficiency in the long run. Obviously it is the semi-involvement relationships between Norwegian exporters and the European customers who face the greatest challenge. These relationships can be developed in two ways: On the one hand, the actors can revert to short-term thinking, opportunism and market exchange, reflecting the low-involvement relationships Norwegian actors have to their fishing vessels. On the other hand, they can be extended into increased interaction, mutual adaptations and interdependence, reflecting the high-involvement relationships the domestic importers have to their customers. The first scenario is possible if there is a continuing large number of actors present. The market perspective implies a large number of buyers and sellers, all information is related to the price, and there are no ties beyond the mere transaction. But with increasing concentration, mergers and integration in the seafood industry as seen from our data, a limited number of actors mean that relationships have to be coordinated across the network to achieve efficiency.

Current research into seafood networks point to the same trends. A large study of global seafood distribution undertaken at the Norwegian Business School from 2005 to 2008 identified similar change towards concentration and specialisation (Olsen, 2012). This is particularly prominent in the Nordic countries, but the same trend is apparent in Britain, United States, Japan and other highly developed economies. In these markets we see a gradual concentration to a point where only a limited number of actors (often between four to six) control the distribution. This requires close interaction and interdependence across the network. Distribution of white fish in the UK is a good example (Cantillon, 2010). Here both production and distribution is dominated by a few large actors. These have found new ways to integrate their operations, such as flow of goods, information, production volumes and delivery schedules. Another consequence is increased innovation in packaging and product development. This in turn affects how the producers buy their raw materials and the specific requirements and product adaptations that suppliers must meet. We find similar patterns in Portugal concerning *bacalao* (dried cod). *Bacalao* is a very important product for the actors involved and they cooperate closely to coordinate activities. For instance, drying and salting performed at the processors location needs to match the product requirements of retailers (Haugnes, 2010). Likewise, in Chile Norwegian companies have for some time dominated the network directly and indirectly through various forms of cooperation. For instance, Norwegian companies are involved as owners of salmon producers (such as Marine Harvest and Mainstream), but also as suppliers of feed, equipment, and medical equipment (Cantillon, 2010; Huemer et al., 2009). In Japan the traditional fish markets are giving way to direct distribution because large exporters want to trade directly with Japanese retailers (Abrahamsen, 2009). Mergers on the production level in Norway and consolidation of major retail chains in Japan means there are close ties between Norwegian suppliers, Japanese importers, Japanese processors and the retail chains.

This comparison suggests that the more a network becomes dominated by a few actors, the more important the interaction between the actors becomes.

CONCLUSION

In this paper we have looked at how direct and indirect customer supplier relationships are affected when the most important resources are available only through an exchange system organised as a “market”. Our empirical case has centred around the relationships between Norwegian exporters buying herring from an auction system on one hand, and selling this

herring to industrial customers in Germany, Poland and Russia on the other. Our results suggest that there is a potential for closer interaction between the actors, but this is hindered by the particular way in which the resources are made available. This creates tension and conflicts, particularly concerning the role of the Norwegian exporters.

Current trends in seafood distribution suggest a development towards a limited number of actors. This development will also have an impact on the way the herring industry is organised. Ultimately, the auction system is difficult to maintain as it is difficult to have a “free” market where there is only a limited number of buyers and sellers present.

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