The Interactive Constitution of Actors in Industrial Networks: The Case of the Norwegian City of Ålesund

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Abstract

The actor-dimension of the Activitiy-Resource-Actor (ARA)-model has not gained the same attention among Industrial Marketing and Purchasing (IMP) scholars as the resource and activity dimensions. However, the issue of what an actor actually *is,* in the sense of its interactive constitution, is important from an industrial marketing and purchasing perspective that emphasizes the interactive character of the business landscape. This is adressed in this paper. As a concequence of their interactive constitution, actors come in many forms and they are never pre-determined but rather continuously forged out of interactions. In this paper, the Activity-Resource-Actor-model is used to illustrate how actors are forged by interaction and to explore interaction-patterns around an actor of an unusual shape: A city. The purpose is to explore the small world of a city as a business actor and to illustrate the multi-level and variable character of actors. The paper concludes with a definition of what is termed *interactive actors*.

Keywords: actor, interaction, heaviness, ARA-model, jointness, fish industry, Ålesund

1. Exploring the Interactive Constitution of Actors in Business Networks

The Activity-Resource-Actor (hereafter "ARA")-model (Håkansson & Johanson, 1992; Håkansson & Snehota, 1995) conceptualizes the substance and function of business relationships as related to three dimensions of *activities*, *resources* and *actors*. It is a well known analytical tool within the Industrial Marketing and Purchasing (IMP) research community. Indeed, our knowledge of business relationships and networks have expanded over the past 20 years as the ARA-model has been explored by studies reporting on investigations – empirical and theoretical – of the interactive character of activities (e.g., Dubois, 1998; Hulthén, 2002; Håkansson & Waluszewski, 2002b; Prenkert, 2003) and resources (e.g., Baraldi, 2003; Baraldi & Strömsten, 2009; Håkansson & Waluszewski, 2002a; Strömsten & Håkansson, 2007). Lately, the resource dimension have been so much emphasized to almost merit the label of a research approach in itself (Baraldi, Gressetvold, & Harrison, 2012). Also the ARA-model as such have been developed and extended in various directions (Lenney & Easton, 2009; Håkansson, Ford, Gadde, Snehota, and Waluszewski, 2009). The extension by Håkansson et al. (2009) can be likened to a second stage of its development: The ARA-model *Mark II*.

The actor-dimension on the other hand is a somewhat different story. It has not gained the same research attention among IMP scholars (Håkansson, 2009, p. 134). While there exist attempts at understanding the indirect *features* of actors such as issues concerning trust (Huemer, 2004; Young & Wilkinson, 1989), identity (Håkansson & Snehota, 1989; Huemer, Håkansson, & Prenkert, 2009) and role (Anderson, Havila, Andersen, & Halinen, 1998; Forsgren & Johanson, 1992), research aiming at clarifying the actor as a concept or to specify it and to uncover, not only its features, but also its inner *character* in terms of its *interactive constitution*, is rare. Among the exceptions are studies of certain network formations and actor mobilization conceptualized as issue-based nets (Araujo & Brito, 1998; Brito, 2001) as exemplified by the development of a user-network in Harrison & Waluszewski (2008) or as value-based networks (Ritvala & Salmi, 2010; 2011). Another stream that has gained increased attention among IMP researchers emphasizes individuals' perceptions of actors and networks in terms of their network picture (Henneberg, Mouzas, & Naudé, 2006). While such research efforts are good they are not sufficient. If the actor in the ARA-model have been allocated a third of the explanatory "room" (Håkansson, 2009) it should warrant at least a third of the research attention among IMP scholars.

The reason for the paucity of research on the actor dimension may be that, as a concept, actor is problematic in itself. It is difficult to define and it comprise multiple levels of phenomena ranging from individuals to firms to clusters, to networks. Furthermore, an actor and its identity change with its counterparts. It is both variable and multi-level. In some studies it boils down to the problem of boundary drawing and delineation (Geiger & Finch, 2009; Prenkert & Hallén, 2006). However, from an IMP perspective emphasizing the interactive character of the business landscape (Håkansson, Ford, Gadde, Snehota, & Waluszewski, 2009; Waluszewski, Hadjikhani, & Baraldi, 2009), the ofthen overlooked issue of what an actor actually *is* – its *very interactive constitution*, is important and intriguing. This is what this paper is about. The main issue being adressed is how actors are being interactively created and how we can describe the nature of the character of this interactive shaping.

2. Analytical Departures

From an interactive perspective, what all actors share – regardless of their delineation – is patterns of co-evolution and jointness due to interactions over time in a business landscape (Håkansson, et al., 2009, p. 41ff). These interactions produces heaviness in terms of resources having been adapted, activities coordinated and actors learning about each other (Håkansson & Waluszewski, 2002b). This heaviness means that a given actor is important for some others. Because it is created in interaction, it is just as much dependent on the surrounding nodes as it is on any given focal node where resources and activities come together and meet. Control of a certain resource gives heaviness in the same way as control of certain activities and/or actors also gives heaviness. One way to analyze this type of heaviness is to look at the interactions among entities by means of exploring the substance layers of their interconnections using the ARA-model as an analytical point of departure.

In this work I use the ARA-model to explore patterns of interactions that create jointness drawing on a case of an actor in a perhaps unexpected and unusual form: a city. That actors come in many forms and that they are not pre-determined is a concequence of their interactive constitution – they are forged out of interactions. This case study is an example of an actor different from the traditional notion of an actor as a business firm, or individual. This does not mean that business firms are not important, or that individuals are not important. It does, however, provide an empirical illustration of jointness based on heaviness from interactions attributed to other entities than firms and individuals.

By adopting an interactive approach using the ARA-model (Håkansson, Ford, Gadde, Snehota, & Waluszewski, 2009; Håkansson & Johanson, 1992; Håkansson & Snehota, 1995) I shall explain in what way the city of Ålesund is a business actor in an effort to explore its heaviness. Given that Ålesund in some certain ways – in this study as a city in which the industrial fish sector is chosen as a focus – is an actor with heavy activity, resource and actor interactions, what does the connections to other parts of the 'fish world' look like? What interaction patterns can be discerned that stretch beyond Ålesund? I shall investigate the character of heaviness by asking what the substantive interactions among the actors, activities and resources look like in Ålesund and how they connect to other places in other parts of the world. Expressed differently, what are the substantive actor, activity and resource interactions of a business actor like the city of Ålesund? The purpose is to explore the small-world (Håkansson, et al., 2009, p. 133) of a city as a business actor and to illustrate the multi-level and variable character of actors in interactive settings (Håkansson, et al., 2009) – what can be called the "interactive actorness" of business actors.

3. A City as a Business Actor

By industry professionals, the small Norwegian town of Ålesund is considered a global fish metropolis (Grytten, 1999, pp. 529-536). For these professionals this is an expression and acknowledgement of the fact that one inevitably get caught by its heaviness and pulled in. There is always some aspect of one's business that becomes influenced by Ålesund. It is a force from which one simply cannot escape. It can be ignored but that will have some real consequences as it means managing things by oneself, more or less against a hidden force. It is usually futile. Ålesund appear to be surrounded by a heaviness which exerts its powers on the other parts of the global fish business. If one is in this business, one cannot avoid experiencing it – the heaviness of Ålesund is strong.

While there appears to be certain heaviness about Ålesund, it is not clear what it consists of. Is it attributed to its history as a fishing town? Or from its geographical position? First, as a town, Ålesund share similar histories with many others like towns along the shores of Norway. And its position in the world is hardly enough to account for its heaviness. It is located far up to the north in a remote and sparsely populated area. This cannot account sufficiently for its heaviness. The heaviness and Ålesund's role as an actor comes from somewhere else: the source of its heaviness is the interactions with its counterparts.

In investigating this heaviness I shall illustrate the actor structures, activity patterns and resource constellations of Ålesund's seafood business sector in a systematic analysis. But to more fully understand where we are today we also need a rudimentary understanding of the history and development of Ålesund as a business actor. While the focus is primarily on the space dimension of business interaction conceptualized by previous IMP research as jointness, an understanding of some of the history and development of Ålesund as a city serves as an entry point to the description and mapping of the interactions. The next section therefore provides a brief history of the city of Ålesund, followed by an outline of the methodological considerations and the analytical frame that will be used to investigate the questions posed earlier. Then I present the case analysis, followed by a discussion of how Ålesund and the rest of the world are connected. After that I discuss the implications for the view of Ålesund as a business actor and for the management of such an entity. The paper ends with some concluding notes.

3.1 A Brief History of the City of Ålesund

Unless indicated differently, this section is based on data from Grytten (1997; 1999) and from information retrieved from http://www.alesund.kommune.no/historie/byhistorien, accessed 2010-12-05.

To the common man the city of Ålesund may be a rather anonymous small town in the middle of nowhere. However, to fish, Ålesund is what London and New York is to money. Or more accurately, Ålesund is to fish related industrial activities what London and New York is to financially related activities: a metropolis. If you ask anyone within the global fish industry if they know of Ålesund, they undoubtedly reply that they do so. Either they have been there to inspect a processing facility; or they have bought fish from the firms in Ålesund; or have been employed by a company there; or worked in a company owned by a multi-national with offices in Ålesund; or been to training there; or read an industry report produced there; or invested in technology from a firm there. I could go on forever. No matter if the respondent is a Japanese trader, a US retail category manager, a Portuguese importer, a UK fish market actor, a Chilean salmon producer, or a Norwegian processor—Ålesund is *the* city for them.

Obviously, Ålesund is a place with many connections of many types within the fish industry, not only in Norway but internationally. In order to begin understanding why this is, we need a brief historical introduction to the city. While this is not a historical exposé, a look back at history is useful to put the contemporary fish metropolis in a historic context.

Traces of the history of Ålesund dates back to medieval times when the place was first settled by people who found the strait between the islands of Aspøya and Nørvøya to be a good spot for trade and fishing. In the 1500s the first merchants came and the natural good harbor and the proximity to rich fishing banks off the coast contributed to the development of Ålesund as a fishing town. The place got limited reloading rights in 1793 and full rights in 1824 which is the same year as the first shipment of baccalao was sent off to Spain. In 1835 the first Spanish ships came to Ålesund marking the beginning of the "Spanish Era" with ships from Spain lying waiting ashore that would last for some 40 years. By that time Ålesund was a booming fishing town with about 300 inhabitants. The production of baccalao started around 1750 and is still a major product of the city. During the 1840s the route and market to Latin America was opened and in 1848 Ålesund was awarded full city rights and was inhabited by about 1500 people. In a mere 25 years the small fishing town of 300 had developed into an international commercial trade centre based on the fish with city rights and some 1500 inhabitants.

During the last few years of the 19th century an equally dramatic development happened, although this time in relation to technology rather than to trade and exports. In 1861 two Swedish so called "bankskøyter" from Bohuslän came into the bay of Valderhaug in Ålesund to bunker. These were decked fishing boats especially designed for fishing on the banks off the coasts of Sweden and Denmark. One year later Norwegian merchants ordered ten such boats to be built by boat builders in Ålesund. The transformation from open vessels to decked ships had started. In 1884, the first fishing vessel powered by steam was ordered. These vessels had a much longer range and were less dependent on the weather for the fishing. By the turn of the century, Ålesund had Norway's largest fleet of steam and decked fishing vessels fishing over large areas of the North Atlantic.

During this period a number of vessels were also built to transport baccalao over seas to destinations such as Latin America and the Far East. Ships from Ålesund sailed across the seas to far away destinations with loads of fish which were exported.

The decked steam powered vessels enabled another important technology shift. These vessels made it possible to use drift nets which were more effective and which could harvest larger quantities of fish at the same time and the fishing for great herring started around 1900. Also the whale and seal catch sectors expanded during this period. This industrialization of the fishing ushered in the period that should be known as the "Great Herring Period" with

massive catches of large herring which would last for some 70 years taking Ålesund into the 20th century. During the great recession, the Norwegian fisheries managed to keep the crisis at arms' length as herring was used to feed, not only the city itself, but much of the population of Norway. In addition, herring was exported to countries such as Sweden, Denmark and Germany (Jonsson, 2006). However, the fishing industry was not completely insulated against the economic crisis in the 1930s and the industry was highly dependent on international markets as 80-90 per cent of the fish production was exported (Jonsson, 2006). In 1930 Norway stood for a 29 per cent share of the European catch (Jonsson, 2006; Tande, 1957) mainly due to the herring fisheries. From then until 1960s, the world's largest homogeneous biomass—Atlantic herring was almost depleted. In the wake of diminishing catches due to over fishing and the general societal development the city went through some hard restructuring times in the 1960-80s with a decline in population, but also major investments in new infrastructure and a shift from the old harbor area to the mainland commercial and service area of Moa. The opening of the Ålesund airport—*Vigra* in 1948 marks the beginning of this period.

It is also during this period that a new sector emerges. In the 1970s, aquaculture establishes itself as a main industry in Ålesund and throughout the rest of Norway. This sector expands rapidly, thus matching, or even superseding the town's quick expansion during the Spanish Era in the mid-1800s. The aquaculture sector focusing first on the farming of salmonids and then on the farming of cod brings a whole set of related technologies and industrial sectors, such as fish feed, equipment and marine biology and genetics. In a mere 35 years, this sector goes from nil to 17.5 BNOK in turnover in 2007 driven by large multinational corporations with interests all over the world in places such as Chile, Scotland, UK, Continental Europe, the US, and Japan.

By now, Ålesund has become established as a fish metropolis based on its seafood industrial activities. Dried and salted cod for baccalao was complemented with herring in the late 1800s and with farmed salmon and cod in the late 1900s. The industry was early on connected to international markets and Ålesund's connections have grown ever stronger and deeper over the decades since the first shipments of baccalao was sent to Spain. Today Ålesund is the administrative and economic capitol of the cultural and industrial region of Møre & Romsdal which is the official name of the county. A slightly different understanding is that Ålesund is the uncrowned capitol of a larger region called "Møre" as synonymous with "Sunnmøre" – a label of the most densely populated and heavily industrialized region in the Central-Western coastal part of Norway. Ålesund lies at the geographical center of this region consisting of a number of municipalities. Hereafter, when referring to "Ålesund" I mean not only the actual geographically circumscribed rather small area of the city of Ålesund, but also other industrialized areas within this larger region.

4. The Analytical Frame and Methodological Considerations

4.1 Investigating Interactions in Ålesund

Assuming industries to be made up of interactions among inter-connected activities, resources and actors forming networks with the shared overall aim of organizing an industrial system to harness the economic potential of some natural resources enables us to investigate their substance by using the ARA-model (Håkansson, et al., 2009; Håkansson & Johanson, 1992; Håkansson & Snehota, 1995). The actor-, activity- and resource connections among entities in the industry forms the substance of the business relationships and the ensuing network formations (Håkansson & Snehota, 1995) and gives them an interactive heaviness as they become embedded in each other (Strömsten & Håkansson, 2007) and as the resource interfaces develop (Håkansson, et al., 2009; Håkansson & Waluszewski, 2007).

The working assumption in this paper is that the "interactive actorness" of Ålesund as a city actor can be investigated by exploring the heaviness of these substances making up the composition of the seafood network (Håkansson, Tunisini, & Waluszewski, 2006).

The case is structured analytically by using the ARA-model as an interpretative lens. This framing enables the identification and description of the central activities, the core resources and the main actors of the seafood network in Ålesund *as a geographic entity*. As a consequence, the case is organized as a description of the main activities performed, the core resources used and the central actors-types in focus, in that order.

4.2 Investigating Interactions between Ålesund and the Rest of the World

While it can be argued that Ålesund's interactive character as a *geographic entity* can be understood by investigating its internal network composition and interactions, we also need an analytical frame to capture how Ålesund connects to and interacts with the rest of the world in order to fulfill the aim of this study – to explore the "interactive actorness" of Ålesund as an *interactive business entity*. These interactions are seen as associated with both a local

and a global level thus emphasizing the multilevel aspects of business networks (Håkansson, et al., 2009). The place as a resource (Baraldi, Fors & Houltz, 2006) is important and it give imprints to other places (Håkansson, et al., 2006) as they are connected. Obviously, to the analytical extent that no business is an island (Håkansson & Snehota, 1989), no place is an island either. In extending this argument, the task at hand in this paper is to describe and analyze some interactions that are part of both local and global networks. To achieve this requires us to explore the interactions that extend beyond the internal network of Ålesund as a geographic entity in an effort to describe Ålesund as an interactive business actor. To this end, I depart from the products (that is the fish in its various transformational stages) and the facilities used to transform it and trace the dependencies and the interaction patterns that form around these two resource types in a comparative analysis. In this way I identify and analyze the interaction patterns surrounding products and facilities as actors exchange resources and adapt and integrate activities and resources to each other as the interactions extends across local and global connections.

4.3 Methodological Considerations

The empirical parts of this paper are based on two types of data. First, secondary data concerning the number of vessels registered in Ålesund, the volumes of landings, number of companies of certain types, etc. has been used. Such information is available from various sources. In this work data from Statistics Norway and NSEC (Norwegian Seafood Export Council) has been used. When this type of secondary data is used, it will be indicated in the text or in direct association to it. Second, primary data from interviews with companies in the seafood sector in and around Ålesund has been used.

4.4 Interviews and Data Collection

Interviews was made with a total of 16 different organizations such as technical maritime support firms, catch vessel operators, fish farmers, processors, storage facility providers, fish meal/oil producers and exporters/distributors (see *Appendix I* for a description of these firms). Interviews were made at many points in time, but only once with every organization. The lion share of interviews was conducted in the period 4-7 March 2003 during an intensive collective research effort among a number of researchers with the common goal of collecting data on the Ålesund seafood industry. Some data from this collection was used to investigate logistical issues (see e.g., Jahre, Gadde, Håkansson, Harrison, & Persson, 2006). The data used here are additional data which have not been exploited before.

This intensive data collection period was complemented with data from company visits both before and after March 2003. The information gathered from the interviews and from field observations from visits at facilities at some of the companies form a database of primary data which has been used to build the case to identify the heaviness of Ålesund as a fish metropolis in a first phase. In a second phase a selection of 17 interviews with key informants from eight organizations made between December 2002 and May 2006 (*Appendix II*) were extracted from this database to analyze the connections between Ålesund and other parts of the 'fish world'. This means that the data I have available allows me to directly explore the seafood network in and in close proximity to Ålesund as a geographic place. However, this network also extends well beyond that geographical area deep into other geographical areas such as Aveiro in Portugal and Puerto Montt in Chile. However, this I can only explore indirectly using the data available here. This is an important distinction, because while I have some personal knowledge of the fish industry in these other parts of the world, the current database comprises no interviews with companies in these areas, only in Ålesund. So it is as if I look at the world from the vantage point of Ålesund. Hence, the ambition is to depict and explore the small world of Ålesund looking out from Ålesund into the network.

4.5 Casing the Data

Secondary statistical data have been used to develop a picture of the size and structure of the seafood sector in Ålesund, and primary interview data to enhance this picture with detail and specification to build the case. The case has been structured by some theoretical framing to bind it (Miles & Huberman, 1994) and to create a tighter case with a specific focus (Ragin, 1992, 2000).

The development of the case followed very much a heuristic path in which I tested out various ways to structure the data in combination with a search for a viable, intriguing and interesting research focus in an abductive manner (Dubois & Gadde, 2002). In this process I eventually encountered the 'surprising fact' (Peirce, 1878) that characterize the start of all true abductive reasoning (Bertilsson, 2004; Van Orden, 2008) and which then serves as a basis for a number of subsequent 'what-if' questions to test out viable explanations (Peirce, 1878). In this case, the surprising fact that I encountered was the fact that a small Norwegian town in a remote desolate part of the world had such huge importance for the international fish industry. Thus was the start of the development of the case with this focus drawing on an assumption – a what-if-assumption – that the heaviness of Ålesund could be understood by

exploring its actor, activity and resource layers. This assumption is based on a theoretical framing developed from research on interaction, networks and the heaviness of business relationships discussed previously.

5. The Case of Ålesund: A City as a Business Actor

In the following sections I explore interaction patterns among the actors, activities and resources of the seafood industry in Ålesund as a geographic entity. The most recent addition to the industry is the farmed salmon production that has developed over the past 40-50 years. Modern aquaculture-based salmon and trout production and export is the seafood product that is most evenly distributed among the regions in Norway. Today, this industry is an important part of the seafood industry in Ålesund. Some aquaculture facilities supply mainly salmon and trout products for production and export. While some of these facilities are still locally owned and managed, a growing number are integrated parts of nationally and even globally operating firms. Some production in Ålesund is managed by companies operating also facilities in other regions of Norway as well as in other countries such as Scotland, Ireland and Chile (see, e.g. Huemer, Håkansson & Prenkert 2009) indicating its status not only as a geographical entity, but also as an economic entity in a business landscape – a business actor.

Ålesund also have important white fish secondary processing and landing facilities and facilities for landing and storing all types of raw produce ranging from farmed salmon to semi-processed and whole white and pelagic fish (Prenkert, Engelseth, & Raabe, 2010). This gives an indication of the density and complexity of the interactions in Ålesund as an industrial geographical region. There are many connections and links. This interactive complexity and heaviness of Ålesund as a business actor will be explored in the following sections. The aim is to provide an illustration of the substantive interactions between actors utilizing resources to perform certain specific activities linked to Ålesund both as a geographic entity and as a business actor. I shall therefore begin with the structure and organization of the major activities, followed by the resources and finally the main actors in Ålesund. After that comes an analysis of the connections beyond the geographical entity of Ålesund.

5.1 Exploring Interaction in Ålesund as a Geographical Entity

5.1.1 Major Activities

The seafood network in Ålesund is concerned with three main types of fish: White fish such as for example cod, pelagic fish such as for example herring and red fish such as for example Atlantic salmon. The major activities involved in the transformation of the fish (of any type) as a natural resource into raw produce and eventually processed seafood are complex and multiple. At some instances they intersect and share some resources and actors may carry out activities related to more than one of them, etc. However for analytical purposes, Figure 1, below attempts to depict this complexity by focusing on the activity structure of the fish industry in Ålesund.

We can explore Figure 1 by following the three main types of fish. In one case, cod is caught by primary processors which are sea-based. These processors are of two kinds, either coastal smaller vessels landing on a daily basis, or larger ocean-going vessels (> 28 m) that stay at sea for 6-8 weeks. Primary processing such as gutting, heading and cutting is made on board and then the raw produce is either stored fresh or frozen. When the fish is landed it is channeled through the fish cooperatives (Note 1) and auctioned through the Norwegian fish auction system controlled by the fishermen's sales cooperatives (for a detailed description of the functioning of these auctions, see Trondsen and Young, [2006], especially pages 401-404) to buyers of the highest bid. These buyers are secondary processors with land-based facilities. Some secondary processors only salt the fish turning it into what is known to the industry as "green fish" and then ships it to next secondary processor. Others also cure and dry the fish turning it into the finished product baccalao. From there the retail and HORECA actors take over.

The catch of herring and mackerel is seasonal with activities concentrated into a period lasting from September to February, with an additional spring season catch of Norwegian spring herring (NVG). Catch of pelagic fish is carried out by a fleet of relatively large fishing vessels. Fish are hauled onboard the vessel and stored in large tanks. Each fishing expedition lasts about 2-3 days. This is a coastal type of fisheries, where the fishing vessel is dependent on supplying its catch as soon as possible to a land-based industrial processing factory. No catch older than 2 days is processed for human consumption. Pelagic fish assemble in large shoals which makes it possible to pump it out of the tanks of the trawler into the production line using a hose mechanism. Pelagic fish finds two main forms of processing; freezing for human consumption, and into fish oil or meal. In salmon aquaculture pelagic fish is used as the main raw material in feed. The supply of pelagic fish is like the supply of white fish organized by a government-regulated monopoly cooperative sales organization. For pelagic fish this is called *Norges Sildesalgslag* and it handles the auction system which is web-based and allows industrial producers to bid on catch onboard vessels still at sea as well as in cold stores on land. Minimum prices are negotiated annually for different pelagic species but

the actual price fluctuates through the use of the auction. The purchasers representing the pelagic industry have learned through experience which vessels/actors tend to supply fish of good quality, and which vessels/actors handle their catch more poorly. The less reputable vessel tends to have to wait to sell its catch. In addition, the different vessels vary in size and catches may vary. Purchasers therefore try to purchase catch from vessels reporting catch volumes that best fit their production requirements of the day.

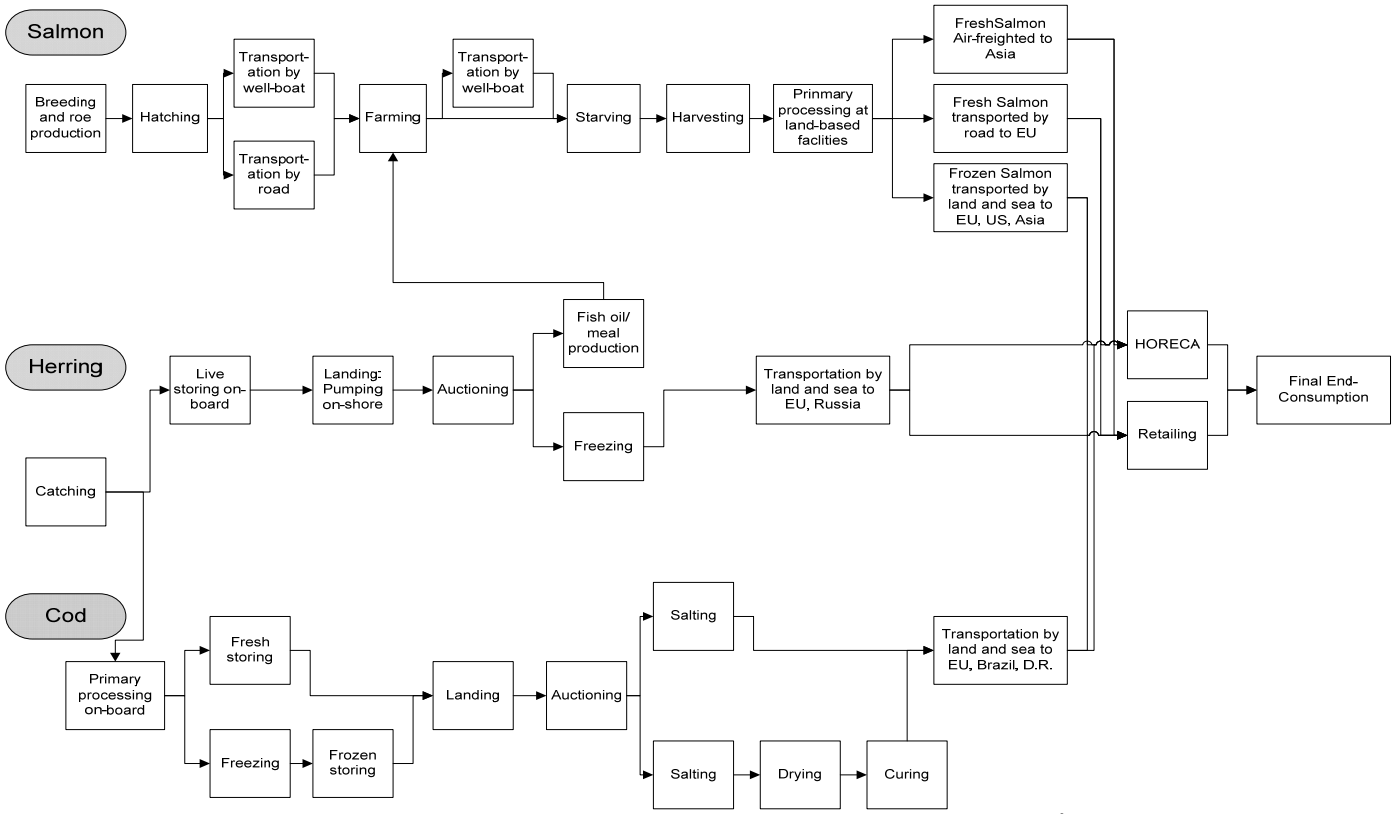

Figure 1. The structure and organization of the activities of the network in Ålesund

The starting point of the salmon production is breeding and roe production. First roe is delivered to land-based facilities that produce fry in a freshwater environment. Roe is supplied twice annually in a refrigerated and well-sealed package by common delivery service. The roe is hatched and fry (less than 15 months old salmon) is produced in freshwater land-based facilities. Fry that is about 15 months old is supplied by well-boat (a specialized ship with a caged area in its centre where the fish is stored alive) or by truck to sea-based facilities in the fjords. Some smaller fry-producers also supply 9-month old products unfit for saltwater habitat to other similar facilities. The seawater facilities consist of a set of ring-nets. Fish in these nets are given a unique identity to secure product safety and traceability. In the past years pancreas disease has reduced production up to 20% impacting on the cost of production. Time may to a limited degree be manipulated through feeding or by sorting; larger fish being taken out earlier, and smaller fish staying longer.

Altogether the journey from roe to finished salmon product takes a little more than 2 years. Delivery to slaughter must be planned since the salmon must be starved one week before delivery to ensure its quality. Fresh processed salmon is transported by truck to domestic EU destinations, while products destined for Asia and Japan are transported by truck to Oslo where they are airfreighted onwards. Frozen products are transported by truck and boat to main distribution hubs in Europe and Asia, and then the retail takes over the distribution of the red fish products to the major consumer markets in Europe and Asia.

5.1.2 Focal Resources

Departing from the resource-dimension, the seafood industry in Ålesund can of course be described in many ways. One way to do it is to focus on the different main raw materials used as input as in the description of the structure of the main activities. Pelagic fish such as herring and mackerel is the focal resource used in a "pelagic network" which transforms it into products offered consumers on markets in eastern and central Europe, Scandinavia, Russia and

Africa (Følgesvold & Prenkert, 2009). White fish such as cod, saithe and halibut is another resource forming the focus of a 'white fish network' producing *baccalao* and other types of processed white fish for consumers on markets in Portugal, South- and Central Americas, and the continental Europe. Finally focusing on red fish such as salmon and trout as a core focal resource reveals a 'red fish network' producing various types of salmon and trout products for European and Asian markets. The focal resource in the red fish network producing salmon is the (North) Atlantic salmon (*Salmo salar*), which is known for its nutritional and commercial value as a human foodstuff. It is anadromous which means that it lives in the sea in salt water but breeds in fresh water. However, Atlantic salmon does not require salt water and numerous so-called landlocked populations exist. But from an industrial production point of view, the sea provides more space and opportunity for farm sites for salt water stage fish than do fresh water lakes and rivers. This makes the production of salmon a two-step process starting in fresh water and ending in salt water.

Both waste from the resource transformation in the pelagic network as well as low quality pelagic raw produce serves as input resources to fish meal and oil production. This in turn is a central component in the production of feed for the salmon farming industry. This is not trivial, because the feed in salmon production is an economically important resource accounting for close to half the total production cost per kilogram salmon (Vassdal, 2006) and the cost of fish oil and meal in producing feed is equally large. Hence, there is a resource interface between the pelagic network and the red fish network through the fish feed adding to the overall complexity.

There is a major difference between wild caught and farmed raw materials. The former is adding complexity by being affected by seasonal variations that can be substantial depending on type of input. Norwegian Spring Spawn Herring (NVG), for example, is only available during certain time periods due to the natural variation in migratory patterns and spawning. This is in contrast to salmon production where producers dimensions and organizes the production to generate a stable and even output of raw material for processing. In the former case, resources related to freezing and storage capacity are crucial, whereas in the latter resources in relation to fish feed and health are crucial creating very different resource dependencies. In Ålesund, there are a number of specialized firms established that base their business on providing various types of supporting resources to the producing companies, such as storage, transportation, freezing, insurance and financial services. Table 1 below summarizes these companies.

Table 1. Support firms to the seafood industry in Ålesund (Adapted from Prenkert, Engelseth & Raabe [2010])

Technical Support Firms	**Logistics Firms**	**Finance and Insurance**
Ship designers and repair yards	Logistics services	Transaction handling
Seafood processing equipment suppliers	Transports	Export guarantees
Technical services	Cold storage	Long-term financing
Packaging industry	Courier and express postal services	Maritime insurance
Information system suppliers		

5.1.3 Main Actor-Types

The core actors represented in Ålesund are the catchers with high sea trawlers and smaller coastal vessels, farmers with hatcheries, fish feed and oil producers, land-based primary processors, storage and freezing companies, exporters and a number of non-governmental organizations (NGS's) such as the fishermen's sales cooperative SUROFI. Table 2 gives an overview of the number of main actor-types and the total approximate values of the activities of some of the types. The bottom row of the table presents some empirical examples of actors from each of the categories from the database of primary data collected in Ålesund.

Table 2. Main actors in Ålesund

Actor type	*Catch/ Fleet*	*Farmers*	*Primary processors*	*Fish oil/ meal*	*Storage and freezing*	*Exporters*	*NGO's*
No. of Actors of type*	814 vessels	112 farming licenses and 35 hatchery licenses	146 including salting, drying and curing	33	21	76	4 with head-quarters in Ålesund
Approx. value**	3.000 MNOK	2.500 MNOK	12.500 MNOK	860 MNOK	5.000 MNOK	3.6 BNOK	n/a
Example	Strand Sea-Services A/S	Pan Fish ASA	Global Fish International A/S	Koppernæs & Sønner A/S	Kloosterboer Terminal Norway A/S	Cod Export A/S	SUROFI

* Source: Statistics Norway, 2006 and NSEC list of seafood exporters, April 2009.

** Source: Statistics Norway, 2006, 2007; NSEC list of seafood exporters, April 2009; NSEC Statistical overview, 2008.

Table 2 shows the heaviness of the Ålesund network. There are many vessels registered in Ålesund, and while not all land their catch in Ålesund all the time, most of them do, otherwise they would not be registered there. Also the range of the vessels ties most of them to Ålesund for landings and maintenance work etc. Strand Sea Services A/S with its high sea trawler *F/T Havstrand* is an example from the data. This trawler alone employs about 40 people and has concessions to fish for cod, saithe, and husk in the Norwegian economic zone as well as pelagic kingfish in the Greenland waters and the Irminger Sea. Havstrand has an onboard fishmeal factory and some processing capacity and it lands fish in Ålesund and functions as a supplier of raw material to the primary processors. Land based primary processors represents a very heavy part of the Ålesund network if judging by the value of the activities being performed. Global Fish International A/S is another example from the data. It is an international company with headquarters in Ålesund specializing in pelagic fish (Note 2). This company sources its raw material from, among others, Strand Sea Services A/S. A more detailed case of Global Fish can be found in Harrison (2012).

The farming business is also substantial with licenses both for salt-water fish farms and for sweet water hatcheries. An example from the data is Pan Fish ASA, a multinational corporation with its regional head quarters, sales- and planning departments and a farm site and processing facilities located to Ålesund. When its slaughtering factory runs at full capacity it receives four boatloads per operational day with raw material. Fish farming depends on buying feed form feed producers. There are 33 of them with facilities in Ålesund. The largest and most well known are Ewos which is part of the Cermaq group and Skretting owned by Nutreco. But I have chosen a smaller actor Koppernæs & Sønner (today Koppernæs Group) as an example from the data because it has a very close connection to Ålesund both historically and with its current operations.

As can be seen from Table 2, storage and freezing facilities constitutes a major part of the heaviness of Ålesund. Much of the operations of the farmers as well as primary processors depend on freezing technology. Raw produce is frozen and stored to buffer seasonal and migratory variation and varying consumer demand. This type of actors providing these facilities is a very important part of Ålesund.

But the real heaviness sits with the exporters. The lion share of the value comes from these actor's operations. However, numbers must be interpreted carefully, as this figure most probably includes value-added processing (VAP) and operations at earlier stages of the value chain. Nonetheless, it gives an indication of the heaviness of these actors in Ålesund. Cod Export A/S is an example of this type of actor from the empirical data.

Ålesund is also the base for many NGO's associated with the seafood sector. *Fiskeri- og havbruks-næringens landsforening (FHL)* (The Norwegian Seafood Federation); *Fiskebåtredernes forbund (Fiskebåt)* (The Norwegian Fishing Vessels Employers Association) and *SUROFI* (The Fishermen's Sales Cooperative) all have headquarters in Ålesund.

Finally, one important actor that has not been mentioned before and which is not included in either Table 1 or Table 2 because of its special role as infrastructure is the Ålesund Port Authority. This is part of the civil infrastructure, which along with the airport *Vigra* just outside Ålesund town further enhances the heaviness of the actor dimension of Ålesund and such actors can have important roles in business networks (Hatteland, 2010).

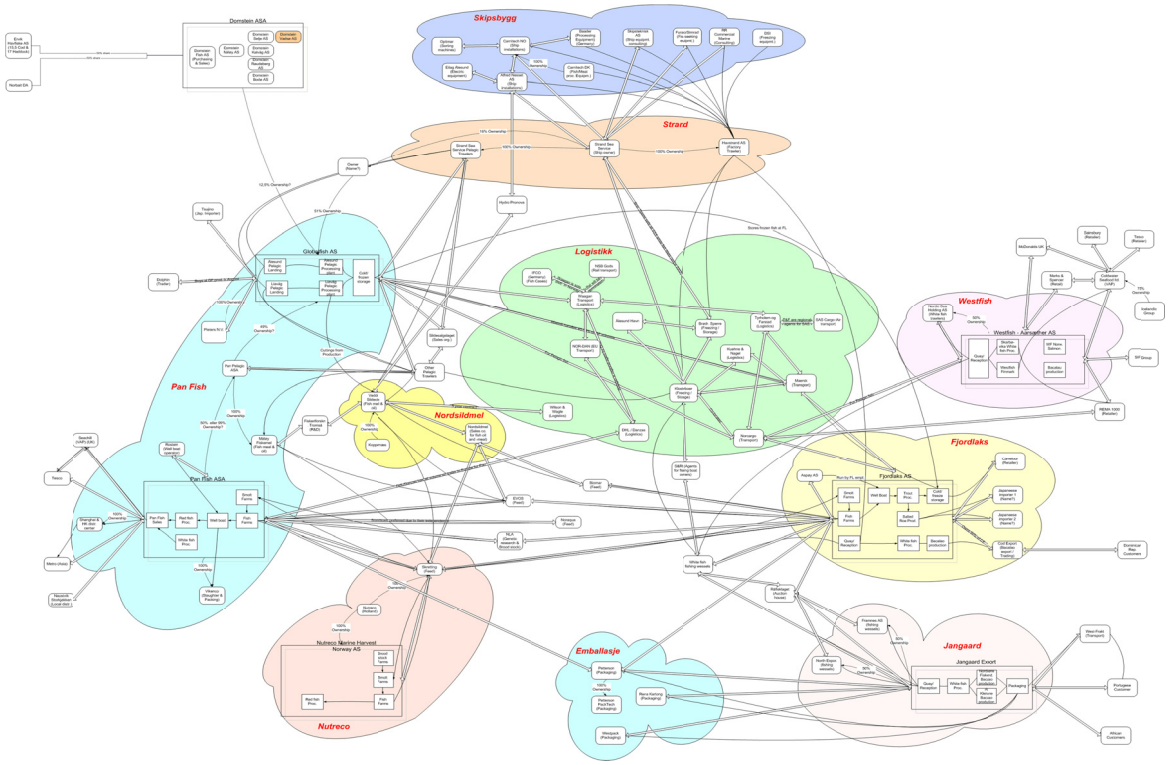

Figure 2. The complexity of Ålesund as an actor

As the case show, while fish as a resource may seem quite uncomplicated, complexity emerges and increases quite quickly. As a business actor, Ålesund is a complex entity with a multitude of connections among many types of sub-actors, activities and resources as illustrated in Figure 2, above.

Just as it is impossible to discern the details of Figure 2, it is equally impossible for any one single person to keep account of the connections of the seafood network in Ålesund. No one can have a complete overview without also making some crude simplifications. However, many people have very detailed knowledge about some specifics of this network. For example, the baccalao people know extremely many details regarding the various personal connections and ties among people in Ålesund and Aveiro in Portugal. And some firms in the aquaculture industry in Ålesund have detailed knowledge and close connections to salmon farming companies in Puerto Montt in Chile. Furthermore, some herring processing plants process fish in ways that are closely connected to how buyers in St Petersburg in Russia want the fish, thus possessing detailed knowledge on adaptations and links between process steps of the fish value chain and about demand preference patterns among consumer groups.

5.2 Exploring the Links between Ålesund and the Rest of the Fish World

Drawing on its history with many international connections, I shall describe the interactions between actors in Ålesund and other places in the world in order to explore the character of Ålesund as a business actor. Paying a closer attention to the interactions of actors representing the red- and white fish networks as well as the pelagic fish network does this. This section is based heavily on the interviews listed in Appendix II. This focus also entails some simplification. I have reduced the amount of data to a subset of the original database. In this dataset I am now focusing on buying/selling and producing/using interactions only and specifically. The rationale is simplification and the goal is to empirically explore the connections between Ålesund and the rest of the fish world in a systematic way. What I here lose to simplification and overview I gain to detail and specification.

5.2.1 Local and Global Interaction Patterns

Based on interview data from Ålesund the local and global interaction patterns can be mapped out and described with respect to two major patterns of interaction. First, I identify what can be called "basic interaction patterns" as emerging from the exchanges of resources among actors across local and global connections. Second, I identify what can be called "adaptive interaction patterns" as emerging from the adaptations and integrations of facilities and other resources also across local and global connections. In this way, the local and global interactions can be identified and analyzed systematically. Table 3 below provides an overview of this. It should be noted that Table 3 contains only some empirical examples of the interaction types in the three networks. For example, in the white fish network,

sourcing of raw material is done both from global supply chains as well as form smaller local importers/exporters. Thus the same principal buying/selling interaction has two different concrete patterns in the data, linked to both the local and the wider global interaction patterns. The local columns contain examples of local interaction patterns and the global columns examples of global interaction patterns regarding the networks and interaction types respectively.

One actor in the white fish network, *Fjordlaks* is characterized by tighter local links both upstream and downstream. Fjordlaks is set up to interact in specific ways with the fish auction and Strand supplying raw material. These interactions are heavily impressed with local adaptation and specification. One example is the use of the freezing storage at the Kloosterboer Terminal as a shared resource. On the other hand Fjordlaks is also set up to interact with customers in international markets in a very specific way using only one unit (Cod Export) to interact with the various local agents that mediate the interaction with retail and end-customers. These interactions also bear traces of the respective local interactions and adaptations having been made. Global interaction patterns in terms of retailer specifications and demands are present but seem to have less impact on the interaction patterns in the white fish network, while exceptions can be found, of course.

In the pelagic network, one actor; *Global Fish* has interactions that link a number of actors with local, national and international presence. Global Fish itself is established as an integrated, coordinated supply network with links at all these levels. Local interactions are common between Global Fish, Domstein and Nordsildmel, which are feed and meal producers, whereas some local adaptations have been made, especially concerning transportation and supply of waste from processing of the raw material. Such waste is used for production of fish oil and meal at Domsteins facilities and local adaptations have over time forged rather locally specific interfaces between these two actors' facilities and products. At the same time, the fishmeal and oil production is linked to the global salmon industry's demands and requirements for feed of certain qualities and specifications. Here, local interactions connect directly with global interactions. This is not friction free. For example this creates problem with buffering natural variation in the supply of the pelagic raw material.

Table 3. Three networks and local and global interaction patterns

Network / Interaction type	**White fish network**		**Pelagic network**		**Red fish network**	
	Local	Global	Local	Global	Local	Global
Basic interaction patterns	Interactions of Portuguese retailers with local variations in display, etc. and seasonal variations in consumer demand and buying behavior.	Interactions related to the sourcing of raw material from international supply chains.	The buying and selling interactions at the fish auctions and the actors in terms of sales cooperatives controlling these	Customer preferences in international markets with customers buying more value-added products in some areas and less value-added in other.	Interactions in the traditional Japanese distribution system via local fish markets and a layered system of sellers and re-sellers.	Interactions in the integrated sales channels of multi-national corporations providing highly coordinated direct supplies to customers in Japan and elsewhere.
Adaptive interaction patterns	Local variation in specification of maximum levels of water content in the dry Baccalao.	Stiff specifications from international retail on deliveries and quality levels creating specific interactions to buffer variation in quality and volumes.	Interactions to manage the natural and local variation of the raw material and the biological and geographic aspects of it.	An increasing demand for more value-added products in emerging markets creating interactions in relation to processing and technology.	The Japanese sushi-culture with interactions concerning the freshness and texture of the fish, color and quality, etc. Sushi-chefs inspecting individual specimens for quality.	The interactions in the integrated value chain of global salmon production. For example interactions between fish and feed and actors supplying feed to farmers.

Access to pelagic raw material is highly seasonal due to natural variation and migration patterns of the fish. This local dependency stands in stark contrast to the global demand for fish feed from the salmon industry which have a quite different cycle, as mentioned earlier. In addition, the salmon industry designs its production to compensate for the biological cycle of the fish to create such a steady and stable flow of resources as possible. This can be done with farmed fish, but is of course impossible to do with wild catch. What can be done is to buffer seasonal variation in the pelagic fish by storing it. This has created some specific interaction patterns in Ålesund with cooperation among some actors on freezing and storage facilities.

Finally, in the red fish network one major actor in Ålesund is *Pan Fish* whose interactions stretch out across regional and national borders and could be said to embody a global interaction pattern in itself. It is a multi-national corporation with production facilities at many locations in Norway and with international sales and distribution. The company can be said to be a network in itself within the network, with the boundaries of Pan Fish as part of a larger global salmon production, distribution and consumption network. But Pan Fish also have strong local interaction patterns in Ålesund most clearly linked via the Ålesund business unit.

Fish feed and fish health are major issues in salmon production. In Ålesund, the salmon production of Pan Fish is linked to global animal health corporations supplying vaccines against diseases such as salmon lice etc. These companies are part of large global networks of biological and animal health research constantly developing new drugs and methods to keep the fish healthy and alive. New vaccines are developed in global settings and introduced on many markets among which the sites in Ålesund are one. Local regulations vary among production sites in the world, and local practices for distribution of vaccines and the use of antibiotics, for example, have developed, sometimes in opposition to the developments in the global biological and animal health networks. This interaction between local and global networks sometimes creates problems, as both are abundant with both variation and complexity.

This also surfaces in another area. As a multi-national corporation Pan Fish have developed integrated production and value chains extending into many parts of the world, such as Scotland and Canada, U.S. and Japan thus linking the Ålesund business unit to these global networks of production and distribution and sales of salmon. Sometimes local practices develop in certain geographical areas creating some issues when considering, for example, global policy concerning corporate social responsibility, and organizational identity. Such an identity is seen to be universal, and globally applicable, but in practice often being adapted to local conditions and situations, due to varying norm structures, and other cultural- and institutional factors (Huemer, 2010).

One special issue in the red fish network is the different interaction logics in two parallel distribution systems. On the one hand the traditional system going via the local Japanese importer fish markets creating some very specific interaction patterns (see Abrahamsen and Håkansson [2012], for a detailed analysis). On the other hand we have the direct supply system offering salmon to the Japanese market. This system is molded on the global interaction logic of highly integrated and coordinated interactions among suppliers and buyers. Both logics are present simultaneously and both systems are used in parallel. This produces some complexity and dynamics in the systems that can be hard to predict and which requires some considerable mobilization of resources to manage.

5.2.2 Summary of the Interactions of Ålesund as a Business Actor

To summarize, Ålesund displays a multitude of both direct and indirect local and global connections in a variety of ways. Looking at the rest of the world from the vantage point of Ålesund, as was discussed in the methods section earlier; one can summarize the direct local and global connections as in Table 4. This table shows a summary of the direct local and global connections specified by their place in the value chain as being upstream or downstream the value chain from the point of view of Ålesund.

Table 4. Summary of the direct local and global connections of Ålesund

Focal resource network	Upstream Supply	Production	Downstream Marketing and sales
White fish network	Ålesund, Rest of Norway	Ålesund	Dominican Republic, Portugal, Brazil, France, Italy, Spain
Red fish network	Ålesund, Canada, Scotland	Ålesund	EU. U.S., Japan
Pelagic fish network	Ålesund, Rest of Norway	Ålesund	Western Europe, Russia, Japan, China

The white fish network of Ålesund is directly linked to the rest of Norway upstream and to other countries in Europe and the South- and Central Americas downstream. The red fish network of Ålesund is linked to other places in Europe and the US and Asia both upstream and downstream the value chain. The pelagic fish network is linked to the rest of Norway upstream and to countries in Europe and Asia downstream. But this is the picture rendered from the vantage point of Ålesund and emphasizing the direct connections. Most certainly many indirect network connections exist among these places, of which this case shows only a few as discussed above. One such example is the links between the pelagic and red fish networks in overlapping in a shared resource in terms of pelagic raw material. The data seem to indicate that the resulting complexity includes many types of indirect links.

Such indirect links connects the whole ”technology complex” behind the Ålesund network to the “market complex” which Ålesund relate to in the way described above. In this way Ålesund resides in a bottleneck linking upstream and downstream interactions across global sites of the fish world. Ålesund has a position in the middle of an hourglass shaped structure that makes it very important to many other actors, activities and resources.

6. Findings

6.1 Understanding Ålesund as a Business Actor

Ålesund’s powers as an actor stems from its features as an interactive place. As an interactive place, Ålesund is in control of some certain abilities and resources the most important being an organizing capability. Ålesund shows a massive capability to organize the industrial system of fish processing and distribution to end-users. Ålesund have a resident knowledge in this sense, making it central in the organizing of these globally spanning systems. This makes it less likely for any one actor investing in new facilities to place it very far from Ålesund because of the inherent heaviness of already existing resource, activity and actor structures. Industrial processing of fish is best done close to where it has been done before. In this way heaviness emerges.

The reason for this can be found in the complexity of the interactions of the industrial activities, resources and actors that form intricate, complex and non-linear interaction patterns. Thus we are back at the place where we started this investigation. The only way to handle the complexity that interactive entities create is more interaction! This interaction is necessary to handle the variety and complexity of the network in which Ålesund as a business actor is part – a network that stretches out across the global fish world. And the more adaptation and integration, the more interaction is needed to manage the ever increasing complexity and intricacy of the local and global connections of Ålesund. To manage the small world is doable, but not easy and it requires some substantial resource mobilization and activity coordination such as the one that we have seen in the Ålesund case.

This is what gives Ålesund its heaviness as a business actor in the global fish network: A tremendous collection of interactive resources, knowledge and experience accumulated over a long time concentrated on industrial processing of seafood at this specific place on the western coastline of Norway. Ålesund has become an interactive node with a certain ability to organize resources in a certain way, which are especially relevant to the global fish industry in turn generating added complexity, in turn requiring even more interactive capability. And where is this capability to be found? You have guessed it: In Ålesund. And so it all begins anew. This is the working mechanism of the heaviness of Ålesund as a business actor, and this is what makes it a global interactive fish metropolis.

In Ålesund some individuals have deliberately and consciously interacted to create some special things in relation to industrial seafood activities: Some people in Ålesund have systematically been engaged in organizing attempts to set up international business relations and to create the global business network. This is done based on the interaction among business units in these networks. These interactions usually involve a focus on resources, both for exchange and for use in the processing of the various raw materials.

6.2 The Double Nature of Ålesund as a Business Actor

The fish industry in Ålesund is an economic sector with a double nature. It is strongly connected to a geographically defined area – Ålesund as a city. The natural variation and migration patterns of the fish biomass also tie it into certain locations. So do some of the technologies used. For example, some fishing vessels must land their catch on a daily basis which limits their reach and tie them to certain clearly delineated geographical locations. While some other vessels can stay at sea for a longer time, there are still limitations in range that connects them to certain places. On the other hand, other technologies such as processing-at-sea and freezing technologies developed in other industrial sectors for different purposes cut in, and can potentially ease up on some of these limitations. Other types of international actors such as large fish- and seafood producing companies are part of global concerns with many links to global networks dense with knowledge, development and increased economization.

It is interesting to note that while obviously being built up by "local" interaction and resource dependence defined by its geography, Ålesund is also part of a "global" interaction formed by global actors with resource dependencies and interactions beyond the local defined by its character as a business actor. For example, there are examples of local cooperation among actors located in Ålesund when it comes to utilizing freezing technology and cold storage. Such resource sharing is part of the local interaction patterns of the fish industry in Ålesund. At the same time, the particular freezing technology and its development is part of a global setting in which some global actors utilize knowledge and technologies on a global level to improve and refine the technology. Another example is the local fish auctions being designed to ensure reasonable payment for the raw material to the catch industry. But the actual information system that runs and controls the auction is based on a system used to trade flowers in Holland, again indicating it as part of a global setting. Here we near the border of the small world of Ålesund as an actor. In the network of freezing technology, Ålesund is a whole different actor, with much less power and control compared to the fish network. This is an illustration of the variable nature of business actors. The case analysis shows that the resources, activities and actors in Ålesund display a double nature: On the one hand as components of the local interaction patterns defined by geography; On the other hand as parts of global interaction patterns defined by Ålesund's role as a business actor. This Janus-like nature is interesting.

An interesting question then is how this potentially conflicting nature of activities, resources and actors plays out. It seems tenable to at least initially assume that there are connections between the two levels, if in no other way through the sharing of some common resources, activities and actors in a node – in our case in Ålesund. Given this finding it is interesting to investigate what these connections look like, and what the consequences are. What is the character of "interaction footprints" of the local on the global, and of the global on the local? How are geography and economy interacting to create business actors of various kinds and magnitudes? What opportunities, challenges and problems occur as a result of such interactions? These are issues for further research.

7. Conclusions

7.1 Business Actors Are Multi-Level and Variable

This paper illustrates the interactions that forge actors. In an investigation of actors it takes as an analytical stance the view that actors are understood from its interactions with others (Håkansson, et al., 2009). It views an actor from the network-in, not the other way around as in traditional conceptualizations. Drawing on a case study of a city it shows that actors can show up in unexpected shapes. A city can certainly be an actor. So can a firm. And an individual. And a port, etc. This points at the multi-level character of actors in the IMP perspective.

The case study also depicts the small world of Ålesund as an actor, and its borders to other networks such as the freezing technology and other primary produce networks such as the flower networks from which it have "imported" technologies. It illustrates how some specific uses and applications of these technologies create heaviness for Ålesund as an actor. As an actor Ålesund bear traces of all three logics as identified by Håkansson, et al., (2009) that are clear to other actors and which guide their behaviors towards Ålesund. The case shows that Ålesund make sense to other actors by the way catching, processing and freezing technologies can be utilized and combined hence illustrating the use of instrumental or technical logic (Håkansson, et al., 2009, p. 145). Creating efficiency for secondary processors through co-location is an illustration of the use of economic or business logic. Providing the infrastructure for the auctioning of fish being landed in Ålesund is an illustration of the use of an institutional logic where Ålesund becomes both meaningful and important for actors such as fishermen and commanders of fishing vessels.

In this circumstance, it is interesting to ask if Ålesund has a will of its own – if Ålesund is an intentional entity. As counterintuitive it may seem the answer is "yes". As an actor, Ålesund can be said to have intention, power and control. However, the utilization of this for certain purposes is not only a matter for Ålesund as an actor, but just as much a matter for its counterparts – be it firms, agencies, ports, individuals, or governments. For example, solving storage problems by utilizing freezing technology is one way that Ålesund have power by being important to some other actors. Creating economies for secondary processors through co-location is another way. And providing expert knowledge and routinized activity structures is a third.

Linked to the multi-level feature is the variability feature of business actors. Ålesund can be perceived by other actors as represented by one individual. Historically mayors had this role and today individuals filling offices as industry liaisons or business developers, etc. can hold it. Also a firm can be perceived as Ålesund. An actor doing business with a firm with its main offices in Ålesund may see the firm equal to Ålesund. They may say: "Let's call Ålesund and see what they can do for us!"

Exactly how an actor is identified depends on its interactions with others (Håkansson, et al., 2009). Actors are continuously involved in multiple interactions and this is why actors constantly change in their identities. An interesting question in relation to this is if and how an actor can develop a common shared identity among a number of its counterparts, even if these counterparts per definition are different. Can some sort of intersubjective notion of the core identity of a mutual business actor emerge? If so, how and by what mechanisms? This relates to the discussion of co-evolution among actors where a number of logics have been suggested for actors to make sense of their behaviors (Håkansson, et al., 2009, p. 145-146). One of these is an institutional logic which may explain the development of shared meanings and intersubjectivity among actors interacting in a business landscape. Exactly how this comes to pass and how it functions is something we know relatively little about and it require further investigations both empirically and conceptually.

As a first step in such an effort, I shall conclude this paper by suggesting a definition of actors as interactively forged by interactions with surrounding actors. Drawing on previous discussions of actors in Håkansson, et al. (2009), such an *interactive actor* is defined as *a by interaction collectively forged condensation in a network where resources and activities at many levels overlap so as to achieve certain effects and outcomes*. This condensation is organized so as to achieve at least one important effect: to become important to some other interactive actors and thus being perceived as having an identity and role in the co-evolution of the business landscape over time. Being important to others is the foundation to being able to economize in networks, that is, for an interactive actor to be able to create effects in the networks in terms of revenue–streams and wealth accumulation. The particular point of the network currently being condensed into an interactive actor displays resilience to dynamics and stability enough to be able to attain an identity and a role in the network. However, while showing some stability, this interactively forged condensation is not a static entity – it changes continuously with the interactions of the surrounding interactive actors, and its strategic identity is created in interaction (Håkansson & Snehota, 1989).

The definition suggested above undoubtedly falls short of many demands and requirements, and I expect no less than that it will be revised and replaced soon enough. It may however prove useful as a starting point for the further study of joint co-evolving interactive actors. For example, we know little about the actual process of "condensation" in networks – that is of the creation and emergence of interactive actors, and we understand little about the requisites and mechanisms of the ongoing forging of interactive actors. What are the roles of institutions in this process? What role has agency in whatever way it may be defined? These are all questions worth further investigation. Such investigations are likely to require detailed empirical case data as well as a process- and/or holistic approach to business networks, undoubtedly presenting some challenges to overcome. However, approaches such as Actor-Network-Theory (ANT) and Cultural Historical Activity Theory (CHAT) as well as some more process oriented approaches based on the works of Whitehead, Peirce and others show some promise. However, the multilevel character of interactive actors re-actualizes the perennial question of the character of the link between agency and institution. This link is one of the most important aspects of interactive actors in need of further investigation. We lack a systematic conceptualization of this aspect of interactive actors. While challenging and difficult I have no doubt such research endeavors, should they be undertaken, would take our knowledge further and extend the field considerably.

References

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

Anderson, H., Havila, V., Andersen, P., & Halinen, A. (1998). Position and Role - Conceptualizing Dynamics in Business Networks. *Scandinavian Journal of Management, 14*(3), 167-186. http://dx.doi.org/10.1016/S0956-5221(97)00037-7

Araujo, L., & Brito, C. (1998). Agency and constitutional ordering in networks. *International Studies of Management and Organization, 27*(4), 22-46.

Baraldi, E. (2003). *When Information Technology Faces Resource Interaction. Using IT Tools to Handle Products at IKEA and Edsbyn*. Doctoral Thesis, Uppsala University, Uppsala.

Baraldi, E., Fors, H., & Houltz, A. (Eds.). (2006). *Taking Place: The Spatial Contexts of Science, Technology and Business*. Sagamore Beach, MA: Science History Publications/USA.

Baraldi, E., Gressetvold, E., & Harrison, D. (2012). Resource interaction in inter-organizational networks: Foundations, comparison, and a research agenda. *Journal of Business Research, 65*(2), 266-276. http://dx.doi.org/10.1016/j.jbusres.2011.05.030

Baraldi, E., & Strömsten, T. (2009). Controlling and combining resources in networks -- from Uppsala to Stanford, and back again: The case of a biotech innovation. *Industrial Marketing Management, 38*(5), 541-552. http://dx.doi.org/10.1016/j.indmarman.2008.11.010

Bertilsson, T. M. (2004). The Elementary Forms of Pragmatism: On Different Types of Abduction. *European Journal of Social Theory, 7*(3), 371-389. http://dx.doi.org/10.1177/1368431004044199

Brito, C. M. (2001). Towards an Institutional Theory of the Dynamics of Industrial Networks. *The Journal of Business and Industrial Marketing, 16*(3), 150-166. http://dx.doi.org/10.1108/08858620110389777

Cantillon, S., & Håkansson, H. (2009). Behind the Fish Market Facade. *The IMP Journal, 3*(1), 50-74.

Dubois, A. (1998). *Organising Industrial Activities Across Firm Boundaries*. London: Routledge. http://dx.doi.org/10.4324/9780203280324

Dubois, A., & Gadde, L.-E. (2002). Systematic Combining: An Abductive Approach to Case Research. *Journal of Business Research, 55*(7), 553-560. http://dx.doi.org/10.1016/S0148-2963(00)00195-8

Forsgren, M., & Johanson, J. (1992). Managing in International Multi-centre Firms. In M. Forsgren & J. Johanson (Eds.), *Managing Networks in International Business* (pp. 19-31). Amsterdam: Gordon and Breach.

Friedmann, J., & Wolff, G. (1982). World city formation: an agenda for research and action. *International Journal of Urban and Regional Research, 6*(3), 309-344. http://dx.doi.org/10.1111/j.1468-2427.1982.tb00384.x

Følgesvold, A., & Prenkert, F. (2009). Magic Pelagic - An agent-based simulation of twenty years of emergent value accumulation in the North Atlantic herring exchange system. *Industrial Marketing Management, 38*(5), 529-540. http://dx.doi.org/10.1016/j.indmarman.2008.09.004

Geiger, S., & Finch, J. (2009). Industrial sales people as market actors. *Industrial Marketing Management, 38*(6), 608-617. http://dx.doi.org/10.1016/j.indmarman.2009.04.003

Grytten, H. (1997). *Bylexikon I: Litt om mye i Ålesund*. Ålesund: Sunnmørsposten Forlag (in Norwegian)

Grytten, H. (1999). *Hjemsted og by. Ålesund 1948 - 1998*. (Vol. 2, 1968 - 1998). Ålesund: Sunnmørsposten Forlag. (In Norwegian).

Hall, P. (1966). *The World Cities*. London: Weidenfeld and Nicolson.

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), 267-276.

Harrison, D., & Waluszewski, A. (2008). The development of a user network as a way to re-launch an unwanted product. *Research Policy, 37*(1), 115-130. http://dx.doi.org/10.1016/j.respol.2007.10.001

Hatteland, C. J. (2010). *Ports as Actors in Industrial Networks.* Doctoral thesis No. 6/2010, BI Norwegian Busienss School, Oslo.

Huemer, L. (2004). Activating Trust: The Redefinition of Roles and Relationships in an International Construction Project. *International Marketing Review, 21*(2), 187-201. http://dx.doi.org/10.1108/02651330410531394

Huemer, L. (2010). Corporate Social Responsibility and Multinational Corporation Identity: Norwegian Strategies in the Chilean Aquaculture Industry. *Journal of Business Ethics, 91*(2), 265-277. http://dx.doi.org/10.1007/s10551-010-0618-7

Huemer, L., Håkansson, H., & Prenkert, F. (2009). The Becoming of Cermaq: The interplay between network influences and firm level control ambitions. *The IMP Journal, 3*(3), 53-75.

Hulthén, K. (2002). *Variety in Distribution Networks: A Transvection Analysis.* Doctoral Thesis, Chalmers University of Technology, Gothenburg.

Håkansson, H. (2009). Comments on "Actors, resources, activities and commitments". *Industrial Marketing Management, 38*(5), 562. http://dx.doi.org/10.1016/j.indmarman.2009.02.006

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

Håkansson, H., & Johanson, J. (1992). A Model of Industrial Networks. In B. Axelsson & G. Easton (Eds.), *Industrial Networks: A New View on Reality* (pp. 28-36). London: Routledge.

Håkansson, H., & Prenkert, F. (2004). Exploring the Exchange Concept in Marketing. In H. Håkansson, D. Harrison & A. Waluszewski (Eds.), *Rethinking Marketing: Developing a New Understanding of Markets* (pp. 75-97). Chichester: John Wiley & Sons.

Håkansson, H., & Snehota, I. (1989). No Business Is An Island - The Network Concept of Business Strategy. *Scandinavian Journal of Management, 5*(3), 187-200. http://dx.doi.org/10.1016/0956-5221(89)90026-2

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

Håkansson, H., Tunisini, A., & Waluszewski, A. (2006). Place as a Resource in Business Networks. In E. Baraldi, H. Fors & A. Houltz (Eds.), *Taking Place: The Spatial Contexts of Science, Technology and Business* (pp. 223-246). Sagamore Beach: Science History Publications.

Håkansson, H., & Waluszewski, A. (2002a). *Managing Technological Development. IKEA, The Environment and Technology*. London: Routledge.

Håkansson, H., & Waluszewski, A. (2002b). Path Dependence: Restricting or Facilitating Technical Development? *Journal of Business Research, 55*(7), 561-570.

Håkansson, H., & Waluszewski, A. (Eds.). (2007). *Knowledge and Innovation in Business and Industry: The importance of using others*. London and New York: Routledge.

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

Jonsson, G. (2006). *Comparing the Icelandic and Norwegian fishing industies' response to the economic crisis of the 1930s*. Paper presented at the XIV International Economic History Congress, Helsinki.

Lenney, P., & Easton, G. (2009). Actors, resources, activities and commitments. *Industrial Marketing Management, 38*(5), 553-561. http://dx.doi.org/10.1016/j.indmarman.2008.12.020

Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis. An Expanded Sourcebook* (2nd ed.). Thousand Oaks, Cal.: Sage Publications.

Peirce, C. S. (1878, January). How to Make Our Ideas Clear. *Popular Science Monthly, 12*, 286-302.

Prenkert, F. (2003). On Business Exchange Activity: Activity Systems and Business Networks. *Doctoral Thesis No. 106*. Uppsala: Department of Business Studies, Uppsala University.

Prenkert, F., Engelseth, P., & Raabe, H. (2010). *Exploring the Networked Region*. Paper presented at the 26th Annual IMP Conference, Budapest, Hungary.

Prenkert, F., & Hallén, L. (2006). Conceptualizing, Delineating and Analyzing Business Networks. *European Journal of Marketing, 40*(3/4), 384-407. http://dx.doi.org/10.1108/03090560610648110

Ragin, C. C. (1992). 'Casing' and the Process of Social Inquiry. In C. Ragin & H. S. Becker (Eds.), *What is a Case: Exploring the Foundations of Social Inquiry* (pp. 217-226). Cambridge: Cambridge University Press.

Ragin, C. C. (2000). *Fuzzy-set Social Science*. Chicago, Ill.: University of Chicago Press.

Ritvala, T., & Salmi, A. (2010). Value-based network mobilization: A case study of modern environmental networkers. *Industrial Marketing Management, 39*(6), 898-907. http://dx.doi.org/10.1016/j.indmarman.2010.06.009

Ritvala, T., & Salmi, A. (2011). Network mobilizers and target firms: The case of saving the Baltic Sea. *Industrial Marketing Management, 40*(6), 887-898. http://dx.doi.org/10.1016/j.indmarman.2011.06.023

Sassen, S. (1991). *The global city: New York, London, Tokyo.* Princeton: Princeton University Press.

Strömsten, T., & Håkansson, H. (2007). Resources in use: embedded electricity. In H. Håkansson & A. Waluszewski (Eds.), *Knowledge and innovation in business and industry: the importance of using others* (pp. 27-53). London: Routledge.

Tande, T. (1957). *Norsk fiskeripolitikk. En analyse av fiskerinæringens utvikling siden 1920.* Oslo: Studieselskapet samfunn og næringsliv. (In Norwegian).

Taylor, P. J. (2004). *World city network: a global urban analysis*. London: Routledge.

Trondsen, T., & Young, J. A. (2006). The roles of fish auctions in value adding in fish marketing chains. In F. Asche (Ed.), *Primary industries facing global markets: The supply chains and markets for Norwegian food* (pp. 393-426). Oslo: Universitetsforlaget.

Van Orden, G. C. (2008). Peirce's abduction and cognition as we know it. *Journal of Experimental & Theoretical Artificial Intelligence, 20*(3), 219-229. http://dx.doi.org/10.1080/09528130802319227

Vassdal, T. (2006). Total factor productivity growth in production of Norwegian aquaculture salmon. In F. Asche (Ed.), *Primary industries facing global markets: The Supply chains and markets for Norwegian food* (pp. 427-451). Oslo: Universitetsforlaget.

Waluszewski, A., Hadjikhani, A., & Baraldi, E. (2009). An interactive perspective on business in practice and business in theory. *Industrial Marketing Management, 38*(6), 565-569. http://dx.doi.org/10.1016/j.indmarman.2009.06.005

Young, L. C., & Wilkinson, I. F. (1989). The Role of Trust and Co-operation in Marketing Channels: A Preliminary Study. *European Journal of Marketing, 23*(2), 109-122. http://dx.doi.org/10.1108/EUM0000000000550

Notes

Note 1. Norway is divided into five geographical areas. Landings in these are controlled by cooperative organizations made up of the fishermen. In Ålesund this organization for the sale of white fish is called *SUROFI*. Based on legislation this type of cooperatives controls all first hand sales of fish landed on Norwegian territory, both of white and pelagic fish.

Note 2. In 2004 when data was collected, this company was a daughter company of Pan Fish ASA which later merged with Fjord Seafood and Marine Harvest N. V. to create seafood giant Marine Harvest ASA.

Appendix I. List of companies

Company	***Business area***	***Website***	***Key respondent***
Alfred Nesset AS	Ship electrical systems and installation	www.alfrednesset.no	President, Managing Director
Carnitech Norge AS	Fish processing and logistics equipment, sales and service	www.carnitech.dk	Managing Director
Cod-Export AS	Codfish export, specific markets Part-owned subsidiary of Fjordlaks	www.bacalhau.no	Managing Director
Fjordlaks AS	Trout farming and dried codfish processing. White fish farming.	www.fjordlaks.no	Manager, Quality and control Managing Director
Global Fish Int. AS	Pelagic fish processing, marketing, distribution	www.globalfish.no	President TK, Asia Export & Marketing Coordinator
Jangaard Export AS	Codfish processing, marketing and distribution	www.jangaard.no	Chairman, President
Kloosterboer Terminal Norway AS	Cold storage facility	www.kloosterboer.no Group website: www.kloosterboer.nl	General Manager
Koppernæs & Sønner, A/S Vedde Sildoljefabrikk AS	Fish meal/oil processing. Fish farming feed ingredients	www.koppernes.no	Chairman/Owner Production Engineer, Vedde
Nor-Cargo Møre AS	Transport	www.norcargo.no	Managing Director
Pan Fish ASA	Fish farming, marketing and distribution	www.marineharvest.com	Regional Director, Asia

Peterson Emballasje AS Peterson Fish Packaging (sales offices)	Packaging supplier	www.petersonpackaging.no	Plant Manager, Sykkylven Sales Manager, Ålesund Packaging consultant
Strand Sea-Service AS Strand Havfiske AS	Ocean fishing ship owners	www.strand-rederi.no	Managing Director Technology Director Managing Director
Tyrholm & Farstad AS	Transport and distribution	www.tyrholm.no	Managing Director
West-Fish Aarsæther AS	White fish catch, processing, marketing and distribution	www.akerseafoods.com	Sales Director Export Manager I, UK Export Manager II, UK General Manager Fleet Manager Quality Manager
Waagan Transport	Transport and logistics	www.waagan.no	Managing Director
Ålesund Havnevesen	Port authorities	www.alesund.havn.no	Managing Director

Appendix II. List of interviews

Company	***Key Respondent***	***Position***	***Date***
Cod Export	Tor Helge Valderhaug	Owner, Manager	December 11, 2002
Fiskeri og Havbruks-næringens Landsforening	Jan Thorsen	Project leader of ”Pelagisk Forum”	January 4, 2005
Fjordlaks, Ålesund	Svein Flolø	Manager Quality Control	December 11, 2002
Global Fish HQ Ålesund	Jan Roar Hatlem	Logistics Manager	June 28, 2005
Global Fish HQ Ålesund	Geir Robin Hoddevik	Managing Director, sales and purchasing representative	October 28, 2005
Global Fish, Liavåg	Rune Hoddevik	Manager	October 12, 2005
Global Fish, Liavåg	Geir Tore Hjelle	ICT Consultant for Global Fish	October 12, 2005
Koppernæs & Snr. AS / Vedde Sildoljefabrikk	Hans Petter Koppernæs	Chairman of the Board of Directors	March 4, 2003
Norges Sildesalgslag	Kenneth Garvik	Sales Director	January 4, 2005
Norges Sildesalgslag	Svanhild Kambestad	Consultant	January 4, 2005
Olav Strands Fiskeriselskap	Solveig Strand	Director	October 28, 2005
Pan Fish, Ålesund	Dag Nikolai Ryste	Regional Director, Asia	December 11, 2002
Pan Fish, Ålesund	Jon Hallvard Roaldsnes	Sales Director	May 22, 2006
Pan Fish, Ålesund,	Arnfinn T. Nygård	Sales Manager, KAM Japan	May 22, 2006
Strand Havfiske AS	Janne-Grethe Strand Aasnæs	Managing Director and owner	March 5, 2003
Strand Sea Services	Erik Juelsen	Technical Manager	March 5, 2003
Strand Sea Services	Solveig Strand	Managing Director	March 5, 2003