HØGSKOLEN I ÅLESUND

Aalesund University College

Master's degree thesis

IP502009 MSc thesis, professional master

How to increase the sales of Norwegian salmon fish in Chinese market from supply chian perspectives

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Number of pages including this page: 77

Aalesund, May 29th,2015

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Preface

The prices of Atlantic salmon available in Chinese market are mostly abnormal. Official sources of Norwegian salmon fish can be hardly found by consumers and even certain part of agents and retailers. Some people complain that the high selling prices lead to the emerge of various similar substitutions and counterfeit products. Analysts hold the point of view that the high market price could be resulted by the unregulated distribution networks and speculations along the process of delivering the goods to the end customers. With this current owes in Chinese market, we decide to develop a relative study concerning the supply chain management of Norwegian salmon through which we wish to give some insights for both Norwegian suppliers and Chinese dealers in promoting sales of Atlantic salmon fish and building market competitiveness.

This paper has been written in the purpose to address the problems exist in the present supply chain management of Norwegian seafood export firms in distributing and marketing Atlantic salmon to China. By conducting this analysis, we are aiming to bring up discussions and solution to these issues mainly from supply chain and logistic perspectives. Due to the important role that supply chain management plays in today's business competition, we believe that more focuses should be put on the development of valid strategies to improve the efficiency in supply chain operations.

Summary

This whole paper has been discussed the current market consumption of Norwegian salmon in China and the solutions towards the owes, as well as outlook for the further market expansion from supply chain and logistic perspectives. In the first part of work, theoretical works related to supply chain and logistic concepts are mentioned in the beginning part of the paper followed by the content about the present industry profile of Norwegian salmon including: export information in the recent years, constrains and opportunities exists for its future growth. Thereafter, issues in today's Chinese market regarding the consumption of Atlantic salmon will be illustrated. In order to prove that these problems are really exist and will probably become the potential obstacles in the midway of Norwegian salmon's future market expansion, we had also conducted a simple survey for customer researches in the top three Chinese cities with highest average salary. The outcomes of the survey has been summarized as pie graphs with percentage composition shown in the figure. Although this simple survey has reflected some aspects of the customer preferences in the current Chinese society, advanced and research-oriented analysis is demanded for deeper studies of Chinese market as it is believed to be complex but profitable.

In this paper, we aim to dissect the Chinese market from supply chain and logistic perspectives mainly focus on the present weaknesses on the marketing network structure for Norwegian salmon. Suggestion according to our understanding has been given including how to create an integrate and straightforward channel to avoid the speculations in the supply chain and take active strategies to better control on the price. As the important role supply chain plays in the cost-saving and profits generating for business firms, we believe that a good consciousness in supply chain management will help to gain added value and competitive advantages in today's business battlefield.

Contents

Chapter One: Introduction

In this chapter, theoretical background of supply chain and logistic management will be generally shown at the beginning. Following by the summarized information related to current salmon export situation from Norway to China. Thereafter, main problems that have been examined during the study of the present trade situation will be given, as well as the research questions have been raised regarding those main problems. The study purposes of this study paper and the structure of the entire paper will be presented in the later part of this chapter.

1.1 Background

Before 21st century, the concept of supply chain management is barely understood and used among businesses and organizations. Companies always concentrate on the inputs and outputs of the processes, concerning little for the internal management working of other individual players. As what has been defined by the the Council of Logistic (CLM) in 1986:

Logistic management is the process of planning, implementing,and controlling the efficiency, cost effective flow and storage of law materials, in-process inventory, finished goods, and related information flow from point-of-origin to point-of-consumption for the purpose of confronting to customer requirements.

Later, the term “supply chain management” appeared and was interpreted with addressing on the integration and cooperation between companies in the supply chain network. Many researchers have recognized supply network structures as a new organizational form, such a structure can be defined as "a group of semi-independent organizations, each with their capabilities, which collaborate in ever-changing constellations to serve one or more markets in order to achieve some business goal specific to that collaboration" (Akkermans, 2001).

Gradually, supply chain management has been taken as a priority by organizations who finally realized the importance of effective supply chain networks in extending beyond traditional enterprise boundaries and seeking to organize entire business processes throughout a value chain of multiple companies. Changes in the complex business environment have contributed to the development of professional management in supply

chain networks. Educators recognize the importance of logistic management in terms of cost and for its potential impact on sales. (Christopher, 2011)

As we are getting deeper understanding about the role that supply chain plays in creating competitive advantages, more focus has also been put on value creation and delivery as well. (Christopher, 2011) In today's challenging competition worldwide, supply chain and logistic management provide firms with competitive advantages in delivering value to end customers and competing in the global market and networked economy. This research aims to understand and investigate how Norway salmon firms manage their logistics activities, distribution and retailers in their export to China and applying cost efficiency to satisfy customer values and ultimately achieve competitive advantages.

The Norway salmon industry profile 2013-2014

Role of fisheries in Norway's economy

The fishing industry has always plays an important role in Norway's economy, which provides a significant amount of employment opportunities directly through fishing activities and some related industries like packaging and transportation of fish products.

According to the statistics released by Food and Agriculture Organization of United Nations, fish farming, fishing, whaling and sealing contributed to 0.45% of Norway's national gross domestic product (GDP) in 2009, about 0.02% lower than the industry of agriculture, hunting and forestry.

Table 1.1 Contribution to Norwegian GNP in 2008

(million NOK)

Sector	**Fisheries**	**Aquaculture**	**TOTAL**
Fishing	7 190	0	7 190
Aquaculture	0	2 840	2 840
Processing	4 520	2040	6 550
Wholesale	840	720	1 570
Supporting industries	8 090	10 830	17 430
TOTAL	**20 640**	**16 430**	**35 580**

Source: Sandberg et al., 2010

Recent reports have suggested that fishing industry is remaining a fairly important drive for promoting Norway's economy and national employment. A detailed analysis carried out by the largest Scandinavian independent research organization SINTEF (Stiftelsen for industriell og teknisk forskning) have shown an optimistic outlook for Norwegian seafood industry. The analysis reported an added value of 22.4 billion NOK for Norwegian seafood with 24.1 billion NOK created for suppliers. Due to the higher price for salmon since year 2013, 46.5 billion NOK of value has been created for industry suppliers. The report also said that fish processing made certain contribution to GDP increase and employment rate, and aquaculture is expected to continually bring more employment opportunities. Elisabeth Aspaker positioned as Norway's Fisheries Minister once stated that, those positive predictions reflected the benefits that rising prices has brought to the Norwegian fishing supply industries, which is experiencing a obvious growth.

The share of fishing farming accounts for Norway's GDP in 2012 was reported to be 23.7 billion NOK, lower than the figure of the previous two years. But the same contribution of year 2013 are expected to be significantly higher due to the rising prices for salmon and trout.

Exports

There is an increasing demand for Norwegian seafood both national and international. As can be seen in the following table that among the top six popular fish species consumed in Norway, both salmon and trout experienced a significant percentage change through year 2003 to 2008 with an positive increase of 80% and 74% respectively.

Table 1.2 The SIX most popular species consumed in Norway

(Sales value in NOK million.)

Species	1997	2006	2007	2008	2014	% change 2008 – 2014
Cod	623	897	925	1 062	7246	582%
Salmon	309	782	914	971	43744	4400%
Shrimp	405	554	554	522	===	
Mackerel	196	342	380	438	4130	842%
Trout	140	213	270	311	2349	655%
Herring	215	256	255	259	2728	953%

Source: Norwegian Seafood Export Council

In addition to the increasing national demand, Norwegian salmon and trout are also popular worldwide. The table below has listed most of the species of seafood that exported from Norway for year 2008 and 2009 with respect export volume and value. As can be seen that herring is exported with the most volume for both year 2008 and 2009, and salmon positions the first place in terms of export value.

Table1.3 Norwegian exports of seafood by species

(Volume in tonnes , Value in NOK 1000)

Export of fish, by species [1]

	Million NOK			Change in per cent	Tonnes		
	2012	2013	2014	2013 - 2014	2012	2013	2014
Total	50 817	60 158	67 117	11.6	2 388 856	2 330 666	2 515 666
Salmon [2]	29 562	39 661	43 744	10.3	995 334	957 228	997 143
Cod	5 606	5 812	7 246	24.7	167 896	231 180	260 448
Herring	4 182	3 158	2 728	-13.6	394 005	350 154	300 067
Mackerel	3 004	2 905	4 130	42.2	274 958	252 761	398 708
Coalfish	1 791	1 682	1 863	10.8	79 037	81 929	71 558
Haddock	1 452	1 289	1 488	15.4	95 107	69 096	63 660
Trout	1 819	2 367	2 349	-0.8	57 122	56 023	50 805
Shrimps [3]	565	:	:	:	10 327	:	:
Halibut	441	497	576	15.9	11 699	14 531	14 817
Ling	240	188	234	24.5	6 216	5 235	6 186
Cusk	181	176	161	-8.5	5 226	5 513	4 483
Redfish	111	83	197	137.3	6 049	5 439	11 797
Other fish	1 600	1 515	1 390	-8.3	281 816	271 422	298 406
Other crustaceous animals except shrimps and mollusc	263	827	1 012	22.4	4 064	30 154	37 588

Source: Statistics Norway 2014.

As the second important nation exporting fish products around the world, Norway targets mainly EU countries as the export destinations. France and Denmark used to be the top two markets among these target countries in addition to some other major destinations such as Poland, Russia and Japan. Fishery sector was reported to contribute 5.7% to the Norwegian's total exports during 2009, becoming the second largest export industry following gas and oil. About 10% of farmed fish is remained to meet the domestic demand while the rest 90% is exported to worldwide markets. The exported value (both farmed and wild caught fish) has grown considerably and steadily. The figure has reached to 4 billion NOK in 2009. Among all the exported fish products, fresh, frozen and chilled whole fish are sold with the highest volume. Chilled fish are most popular within Eu countries while frozen fish are largely exported to non-EU countries and Asia markets such as Japan and China.

Table 1.4 Norwegian exports of seafood by major markets
(Volume in tonnes product weight; Value in NOK 1000)

	2008		**2009**	
Destination	**Volume**	**Value**	**Volume**	**Value**
EU	1 150 232	23 128 550	1 232 207	26 372 754
France	135 510	4 031 042	141 919	4 699 046
Russia	349 150	3 900 347	391 962	4 562 698
Denmark	254 711	2 846 897	211 760	3 202 109
Poland	123 977	2 437 733	152 182	3 122 897
United Kingdom	127 803	2 230 633	118 934	2 380 962
Japan	108 057	2 173 927	111 029	2 070 106
Sweden	61 233	1 722 051	67 614	2 026 025
Germany	61 754	1 304 205	94 960	1 859 726
USA	25 386	923 264	44 052	1 802 011
TOTAL	**2 313 601**	**38 733 439**	**2 581 400**	**44 691 737**

Source: Norwegian Seafood Export Council, 2010.

According to the figures released by Norwegian Seafood Council (NSC), exported Norwegian salmon in 2013 value totally 39.8 billion NOK, about 35% more than the previous year. The lower average export price in 2012 had few impact on the price in 2013 which bounced back to 39.7 NOK per kg and brought along continuing benefits to

suppliers with value creation worth 46.5 billion NOK. Reports show that Norwegian exporters has shifted their attention to the EU countries and intended to put more focus on this market, which represents almost 68% or 651,000 tonnes of their entire export quantity in 2013. And this number was recorded to be the approximate percentage of total volume which equals to 65% in year 2012.

France remain the top market for Norwegian salmon, account for 30% of the total export value and volume. However, its position has now been replaced by Poland who has promoted a major processing industry that mainly supply to the demand of German market. The export volume to USA increase 19% and reach to a total amount of 19,200 tonnes, all because of the abolishment of a penalty tariff on Norwegian fresh whole salmon and rising demand. On the other hand, the exported salmon to Asia and Russia has dropped significantly. Overall, the indication of high prices in most of the markets implies higher demand as well as increasing total export volume for Norwegian salmon.

Norwegian exporters are attempting to build cooperation with Norwegian Seafood Council in the hope to push more consumption of Norwegian salmon in Asian markets. Companies who hold such desire are wishing to take as much as benefits from the increasing consumption.

1.2 Main Problems

Unstable supply of Norwegian salmon

Export statistics show that Norwegian salmon export to China was reported to be more than 6,000t in the first half of 2010, but fall to less than 3,000 tonnes in the first half of 2011. This number was up to above 5,000t in the first half of 2012, but down again to less than 4,000t in the first half of 2013. (Shown in Table 1.1)

For year 2014, a recovery has been reported of late, with 6,377t fresh salmon finding their way to China in the first eight months of the year, a near 20% growth year-on-year. Sigmund Bjorgo, who is positioned as Chinese office director of Norwegian salmon council estimated that, Norway's exports to China should have totaled 17,500t for the first half of 2014, instead, they were just 31% of this.

Norwegian salmon export to China (tonnes)					
1st half of year	2010	2011	2012	2013	2014 (First eight months)
	>6,000	<3,000	>5,000	<4,000	6,377

Table 1.1 Norwegian salmon export to China 2010-2014

Source: Norwegian Seafood Export Council

Uneven market share and increasing competition pressure from other salmon origin countries

In 2013, countries of origin for salmon sold in the Chinese markets ranged from Norway to Scotland, Denmark, Chile, with some volume coming from Canada, Australia and Ireland. There is also a small volume of silver salmon and chum salmon from Alaska and Hokkaido. Large volumes of Pacific salmon imported from the USA and Russia are mainly for processing and re-export to the US and EU markets.

The market share of Norwegian fresh salmon used to be over 90% in China before 2010, yet this percentage has dropped to 30% now. And it could be less in the future with increasing entering of other salmon origin countries into Chinese market.Chile has become the major supplying country at present following Norway. Exports of fresh Chilean salmon to China are set to soar, according to the pioneer of the fresh trade into the southern port city of Guangzhou. Traditionally, shipments from Chile have been in frozen format, however fresh shipments to China will increase from 30,000 tons in 2013 to 40,000 tons in 2014.

Consumers popularity

Most of Chinese consumers have little knowledge about real salmon, except that fresh salmon is rich of nutritious and suitable for consumption in its raw form. There is a general lack of official standards and awareness in terms of varieties, preparation methods and criteria for freshness.

Imports of fresh chilled salmon were initiated with some promotional activities launched in Beijing, Shanghai and Guangzhou some years ago. In the early stages of development, consumers could find Norwegian fresh chilled salmon only at

special counters of supermarkets, buffet restaurants in hotels, or at Japanese restaurants. As the market developed, chain stores specializing in salmon were launched in South China. In 2013, consumers are increasingly buying salmon products through e-commerce, and target consumer groups include the young 20s to 30s demographic. The baby food market is also expected to grow in the future.

Substitution of Norwegian salmon in Chinese market

To meet the increasing demand of salmon in Chinese market, a large portion of labeled "Norwegian salmon" sold by retailers are found to be trout or salmon that originated from other countries instead. According to related market research, the salmon demand in China remain significant currently with about 40% increase per year. But findings reveal that only 20% of salmon available in Chinese market are really produced in Norway, with the rest substituted by the other kinds of fish or salmon imported from countries like Chili, Canada, USA etc. Such high substitution rate of Norwegian salmon may have unexpected consequences on the export of real Norwegian salmon, meanwhile affect the brand reputation of real Norwegian salmon. (the quality and price of substitute salmon vary a lot).

The reasons behind this situations in Chinese salmon market are inconclusive. Some argue that the limitations of Norwegian governmental policies on salmon cultivation certifications, rising price of fish feed, costs in manufacturing and related inbound activities result in higher costs of exporting salmon. As consequence, importers and intermediate merchants in China generate lower profits than before, which drives them to switch to cheaper salmons (either from other countries or from similar species, smuggling) and replace the real Norwegian salmon for higher profit margin.

Yet some believe that the obvious gap of market price between Norwegian salmon and the other salmon in Chinese domestic market caused by multiple retailers and distributors, who lift price layer by layer to earn abnormal profit constructs the main reason behind this. In other words, inefficiency may exists in the management process of Norwegian export firms on outbound activities such as distribution, transportation and retail in China.

1.3 Research Questions

Regarding the current situation in Chinese salmon market, we wish to conduct a study work mainly through the supply chain and logistic management of Norwegian salmon industry to seek the major source of costs incurred during the related business operations.

1. Suppliers and In-house Manufacture: source of suppliers of salmon, inbound activities including manufacturing of salmon in domestic plants, inventory movement between manufactures and exporters, collection and storage of inventories, transportation of products etc.
2. Order fulfillment: order fulfillment process, a better way to reduce the lead time to process an order and improve the efficiency?
3. Outbound logistic activities: outbound activities, warehouse and distribution centers, distribution channels, shipment, packaging and transportation.
4. Part of supply chain management in China: distribution, marketing and retailing activities in China. To better control the price of Norwegian salmon in Chinese market, what kind of distribution network is best to use to limit the carrying costs, and what appropriate marketing and retailing strategies should be taken to increase the popularity of Norwegian salmon among Chinese consumers?

1.4 Purpose of Paper

Through the study of supply chain and logistic management of Norway salmon firms(industry), we aim to understand and investigate how Norway salmon firms manage their logistics activities from upstream to downstream in their export to China. Through which, we are looking for a more effective way for cost control and value-added product, and to promote the production and export of salmon to China.

1.5 Structure of Paper

In order to present the overall of thesis's structure, a form of chart from the first chapter to the last part has been presented as the figure below:

The paper is written and composed by four parts:

Chapter 1 - In this chapter, we give brief introduction of the paper, the problem defined, main research question, the reasons and purpose of the study.

Chapter 2 - This chapter provides frame of references related to the subject studied which are used throughout this thesis. The theories derived from literature reviews frame the analysis of an empirical study are presented in the choice of theories. Then each theoretical framework concerned with each dimension is presented.

Chapter 3 - In this chapter, the explanations of research strategy and research approaches used in this thesis are displayed. The method is mentioned and reasoned as well as the strategies exploited in this research. Then details in data collection has been given. Lastly, this chapter ends with the analysis based on the empirical findings.

Chapter 4 - In this chapter, summary on the entire research thesis will be given; discussion on the analysis part the answer to the purpose of thesis is clarified. Also, opinions on future research will be given.

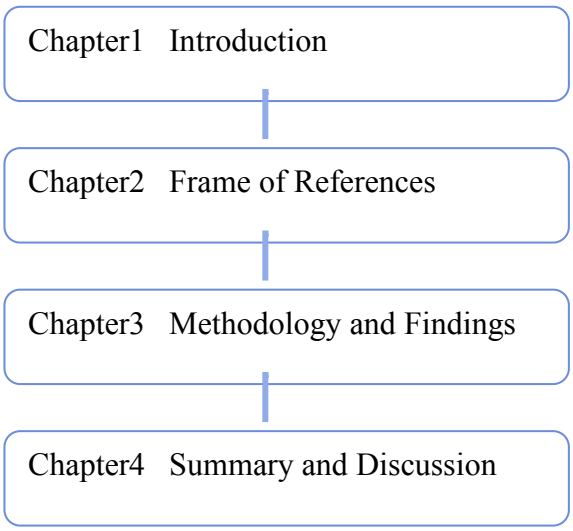


Figure 1.1 Structure of Paper

Chapter Two: Frame of Reference

This part of paper will provide various sources of literature concerning competitive advantage and strategic fits, logistic and cost structure,distribution related to marketing and retail, distribution channels, distribution centers and warehousing, logistic and customer values.

2.1 Competitive Advantage and Strategic Fit within Supply Chain

Competitive advantage should be understood and assessed from discrete activities in a firm rather from the firm as a whole. All the activities that performed by a firm from producing, delivering to marketing can play an important role in devoting to a firm's competitive market position with low overall costs and differentiation to the competitors. (Porter, 1985)

Based on the work of Holcomb (1994), supply chain management has become more focused on constructing competitiveness and profitability (cited in Tracy, Lim & Vonderembse, 2005). Cooper also believes that although some strategies may be easy to imitate by competitors, the competitive advantages that routed from the chain efforts are harder to copy. Effective supply chain, thus, offer the opportunities to create sustainable competitive advantages (Cooper et al., 1997; Higginson & Alam, 1997 – cited in Tracy et al., 2005). Many leading-edge firms regard supply chain as an entire competitive due to added-value and lower overall costs, they treat today's competition as races between supply chain and supply chain instead of company versus company. (Martin, 2013)

The model of Three Cs demonstrates the links among company,customer and competitor. (Ohmae.K,1983) To maintain success market place, firms are seeking sustainable and defensible competitive advantages to differentiate itself in the eyes from competitors,consumers by lower costs operations. It is no longer sufficient to compete with product of good quality, but cost advantage or value advantage or both of them become the major contribution of commercial benefits, which allow firms to be profitable producers with lower costs and products of differentiated perceived value.

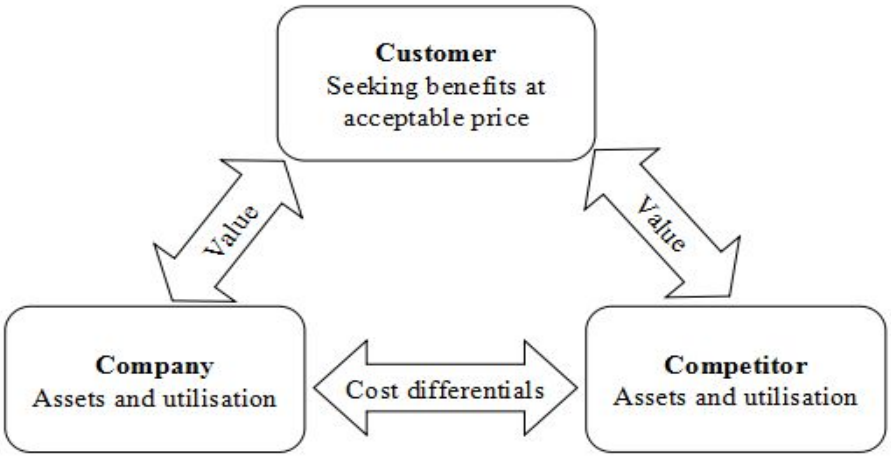


Figure 2.1 Advantage and the Three Cs Model

Source: Ohmae.K,1983

2.1.1 Cost Advantage

In addition to those old believes in creating profit and reducing costs through larger sales volume and market share, Christopher argues that costs in manufacturing a product in today's world mainly rooted in logistic and supply chain management. Improving efficiency in logistic and supply chain management can effectively reduce a product's unit cost. (Christopher 2013) Thus, supply chain management have been addressed by many companies in the purpose to provide customers with goods of exceptional quality and services at a low cost by linking procurement activities, manufacture processes, distribution networks and marketing in a effective way. (Christopher, 2005)

The Model of Supply Chain Strategy, Capabilities and Performance introduced by Morash offers theoretical basis that business strategy can be supported by supply chain strategies through cost leadership and overall cost control in supply chain management. According to Morash, supply chain strategy is supported by supply chain capabilities including standardized operation, fast delivery, broad distribution coverage, superior customer services and low cost in logistic activities. And the ultimate supply chain performance can be evaluated by the criterion like, integration of productivity, quality of goods and customer service, and the costs incur throughout production and logistic process. (Morash,2001)

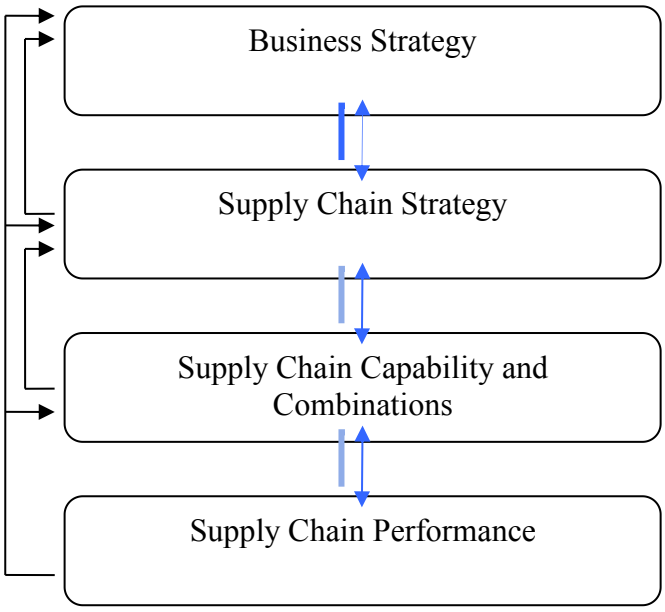


Figure 2.2 Model of Supply Chain Strategy, Capabilities and Performance

Source: Morash, p.38 (2001)

Chopra(2001)'s theory gives more specific interpretation on how to improve supply chain performance through cost reduction in operational activities:

1.Cost reduction in inbound transportation (shipments from supplier to manufacture and distributor)

2.Cost reduction in outbound transportation (shipments from different manufactures to distributor for outbound shipment)

3.Cost reduction in inventory management (inventory aggregation by distributor instead of retailers)

4.Cost reduction in order process (erratic orders from retailers replaced by unified order system from downstream to upstream allows manufactures to effectively plan production)

2.1.2 Value Advantage

Companies now are driven to manufacture and offer value-added goods. The intangible concept "value" can be interpreted as expected product quality at value-based price with superior customer services. (Anderson and Vincze, 2000) In fact, the challenge to accomplish value creation purposes should not be a task that assigned to a single company or certain part of value chain, instead, Normann and Ramirez's theory mentioned

that all the players (suppliers,partners, employees and customers, etc.) in the value creating system should work together and co-create the value. (2000)

Logistic service plays an important role in delivering customer value and enables a company to enhance its competitive position in the market. (Langley and Holcomb, 1992). Logistic services can help to create customer value through efficiency and effectiveness in operation and value differentiation over competitors. (Mentzer and Konrad 1991; Langley and Holcomb 1992) Value can be created throughout the logistic activities, such as easy order placing, distribution availability, delivery consistency, and customer services. Companies will be able to distinguish itself from other competitor as long as it can generate value from unique and inimitable logistic activities.(Grant 2010) Due to the special role of logistic playing in customer value creation, the effectiveness in logistic activities is necessary to be recognized as distinctly outstanding than competitors within the same market scope. (Williamson, Spitzer, and Bloomberg 1990).

Valid supply chain management strategy will assist companies to endure superiority over competitors in terms of customer preference. It has been a general knowledge for a while that consumers buy " benefit" rather than product only. The product is sold for what value it deliver instead of itself. The chance that firms outperform their competitors appears when they can provide differentiated value. This situation drives companies to modify attention to `market researches and customer preference. With raising market sensitivity, competition challenges have transmitted to logistic management. (Martin 2013)

According to Micheal Porter's theory about value chain, it is a more proper way to establish a value chain based on a level of business unit rather than corporate or division level. Products gain some value each time they pass through an activity in the value chain. From suppliers who provide necessary inputs, to the creation and manufacture of products, and through networks of distributors and marketing til lastly all the way to end customers. All these activities are part of value chain or system. Organizations can be viewed as "systems that composed by operational subsystems with inputs, transformation processes, and outputs". To conduct these activities, resources are obtained and consumed including raw materials, labor forces, equipment, offices and buildings, land and so forth. The way these subsystems are carried out impact total costs and profits earned. Among various

activities that companies undertake to convert inputs into outputs, Porter lists the following activities as the primary activities in the paradigm:

1.Inbound logistics- involve all the inbound activities required to transfer raw materials and inventories from suppliers to manufacture plants.

2.Operation- all the activities required to convert raw material, labor and other forms of inputs into outputs (products and services).

3.Outbound logistics-concerning all the activities related to to store and distribute the final output to the end customers.

4.Marketing and sales-processes that promote the selling of products and services with delivering and exchanging for the value of customers.

5.Service- involve all the activities required to keep effective working status of the product or service for the buyer after it is sold and delivered.

And support activities are:

1.Firm infrastructure- include all the basic functional activities that support the daily routines of a firm, such as management, finance, accounting, public relations etc.

2.Human resource management-all the activities that concerning the management of human capital and relationship within a firm. Normally involves employee recruitment, staff training, formulation of compensation policies and dismissing or laying off personnel.

3.Technology-technical knowledge, software, procedures and equipment that have been put into use in the firm's production process to turn input materials into output product and services.

4.Procurement- activities to serves the needs of a firm by acquiring resource from outside market.

To achieve and maintain the competitive advantage of the firm, Porter's idea remind us that every single activity or component in the value chain requires full understanding and assessment of competitive advantage. If any link of value chain lacks of cost or value advantage, outsourcing of this activity should be considered. (Porter, 1985 p.11-15)

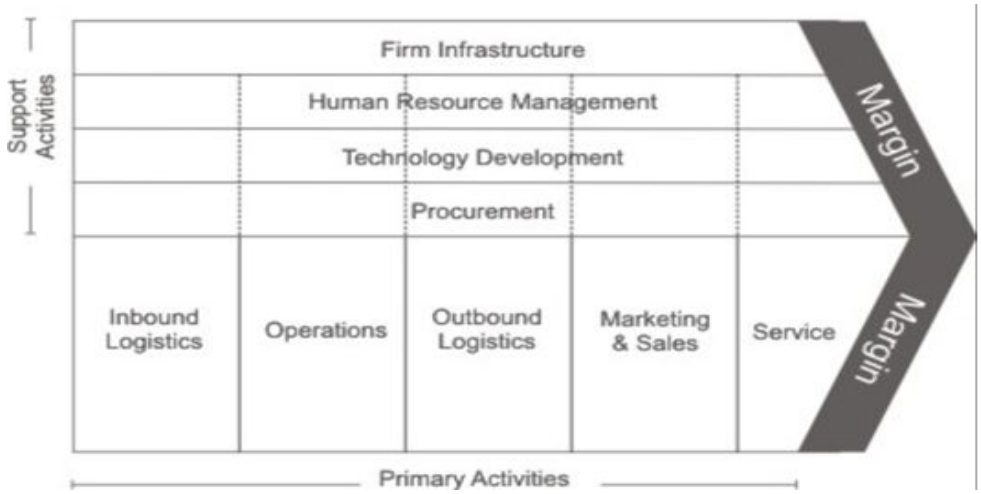


Figure 2.3 Value chain and competitive advantage

Source: Porter, 1985 p.11-15

Logistic theories have always been discussed with customer value by schools of thoughts. The primary purpose of supply chain management aims to create and ensure the value of the goods that provided to the end customers.(Stank, Keller, Daugherty 2001) Shapiro and Heskett (1985) added that, in order to create added value, a company has to deliver the right product to the right customer in the right amount and condition, at the right time and place at the right price. The theory of Shapiro and Heskett supports the idea of Mentzer who claims that supply chain management belongs to part of product's value. (Mentzer et al., 1997). Moreover, other thoughts reveal that once traditional logistic activities are transformed to build superior values, exceptional logistics capabilities are often resulted in as a source of competitive advantage (Morash et al., 1996).

The main focus of traditional logistic on standardized internal operation and satisfy customer needs is needed to transfer into the focus on the cooperation function among value chains and building customer relevance. (Bowersox et al., 2000) As traditional logistic is shifting to the form of value creation services, many organizations start to take logistic capabilities as a new source of competitive advantage. (Morash et al., 1996)

2.2 Inventory management

Traditional literature about inventory normally focus on seeking the optimal amount of inventory from the given reference of supply and demand. Waters has once established his thinking that one critical function of inventory in to become a buffer between supply and demand. The practice of inventory management has become more essential with longer supply lead time caused by increasing globalization. (Waters, 2002). Agile supply chain ideas also view inventory as an important responsiveness as well as constraint (Etienne, 2005).

From both resource based view and cost-reducing consideration, it is quite important to decide whether to hold inventory or not for a company. According to Baker (2010), inventory is generally required if the following two conditions exist :

1) The goods cannot be made-to order due to the short customer lead time. (shorter than supply lead time)

2) The goods are sent directly to the points of sale rather to the customers in a continuous flow. (example of fashion garments)

Despite ranges of thoughts on how to eliminate stockholdings, Baker(2012) mentioned in his literature about an identification that inventory plays a significant role as decoupling points between supply and demand as well as a risk mitigation tool. Goods pass through to decoupling points in line with the estimation on demand and are pushed to the downstream responses to the market by individual customer orders. Besides acting as the decoupling role, inventory is also viewed as one possible risk mitigation technique under supply chain risk literature. (Chopra & Sodhi, 2004, and Christopher & Peck, 2004).

However, a considerable amount of literature with broader supply chain management perspectives recently implies that inventory should be eliminated or avoided. For example, lean supply chain theories has put inventory into the list of seven wastes (or muda in Japanese) that should be eliminated or reduced (Womack & Jones, 1996). Suggestions have been brought up by Christopher for organizations who hold inventory which partly due to the concerns about real costs of holding inventory, which including the costs of storage, insurance, deterioration,obsolescence, damage and shrinkage and working capital. (Christopher, 2005)

2.3 Warehousing and Location

It has become a general knowledge that warehousing is essential in responding to the increasing volatile market. (Christopher, 2000) The resource based thinking state that, an inimitable, rare, valuable network of warehouse will be able to add competitive advantage to a firm (Barney, 1991).

The collaborate functions of facilities in a supply chain is believed to be more important than the individual performance of each facility. Where to locate these facilities (warehouse and distribution centers) and how to effectively operate them are considered to be critical in supply chain management. Warehouse and distribution center (DC) plays an significant role in a supply chain network; as they provide support to the movement of materials, storage of products, assembling shipments and other related logistic activities. (Langevin & Riopel, 2005).

Warehouse as well as its function has been defined by schools of thoughts. Hackman (2006) interprets warehouse in his work as one of the facilities in the supply chain that solidifies goods to avoid transportation costs, allows manufacturing and purchasing in economies of scale. Or based on Gong's work (2008), warehouse is recognized to provide added value and help in shortening response time. Warehousing is also recognized to provide competitive advantages as a key operation in the supply chain which enables tailored services for customers. Two major types of warehouses are classified to be distribution center and production warehouse.(Ghiani 2004) and they can be categorized in a more specific way by the role played in the supply chain, such as warehouse for raw materials, production, finished goods, distribution, and value-added services. (Frazelle 2001). Although warehouses may differ in their way of function, most of warehouses share some attributes in common including typical operations like inspection and receiving, putting away goods, replenishment, sorting, accumulation and packing, order picking and shipping. (Tompkins 2003).

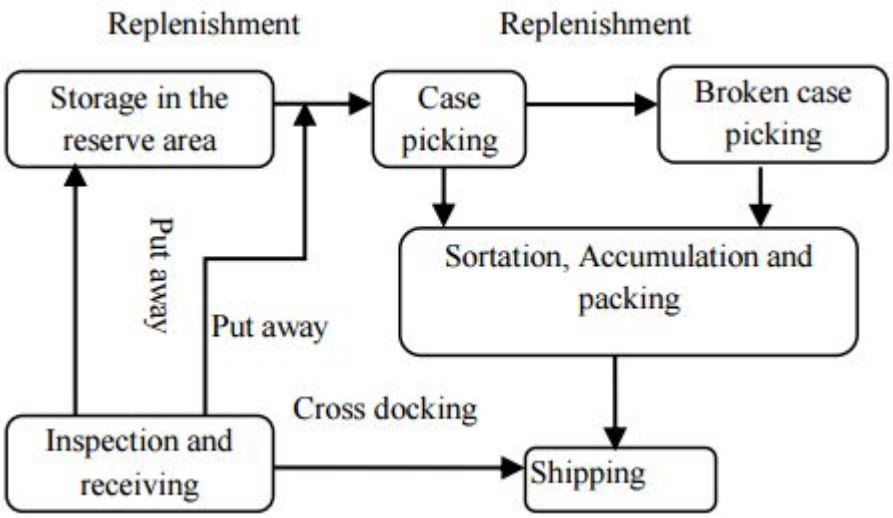


Figure 2.4 Typical warehousing operations

Source: Tompkins 2003

As defined by Wang and Adam in their work, warehousing operations decide the performance in rearranging the amount and assortment of products during their flow through the supply chain. The following functions construct major warehousing operations:

1) Accumulating:also identified as bulk making,one prior job for warehousing is to gather collection of stock.

2) Break bulking:to break large quantities of stock into unit orders to meet customer needs.

3) Assorting:to assort varieties of products to fulfill different customer demand.

4) Sorting:to sort goods into qualities and quantities required by target markets.

5) Value adding: warehouse provides added value through operations like repackaging, customized labeling, customer services and so forth.

For warehousing, operational flexibility have been especially addressed on the demand volume, order time, item or case quantity, presentation of packaging, information on labeling. (van Hoek, 2001 and Baker, 2006):

According to Heung et al (2006), around 2% to 5 % of the sales costs of a company are taken up by warehousing. Companies are seeking for a effective way to reduce and eliminate the costs carrying in warehousing and improve their performance in Return on Assets, so that to enhance its competitive position in current global business environment.

Thus, evidences show that quite amount of companies adopt automation management in basic warehousing functions to ensure their throughput capacity and inventory holdings desired for the most cost-saving warehousing system. (Ramma, 2012)

As a result, the well-developed warehousing system means fairly important to firms and yet researchers have not reached to an agreement on a certain valid warehouse design that either with theoretical or scientific background. (Rouwenhorst et al., 2000, and Goetschalckx et al., 2002). However, there still exist a series of steps for companies to follow when design a warehousing system which proposed by schools of studies. Baker & Canessa (2009)'s work has lists some of the steps that could be follow, and Sodhi (2003) suggests that firms should incorporate flexibility into these design steps with engagement of scenario planning.

1. To identify information including obtain data and requirements
2. To analyze data and information for establishment of unit loads
3. To determine basic operation process and methods involved
4. To consider possible types of equipment and required attributes
5. To calculate the potential capacity of equipment
6. To identify support services and other operations
7. To prepare for possible layouts
8. To evaluate and assess
9. To determine the preferred warehousing design

Warehouse management system (WMS)

Warehouses management is facing challenges from various sources, such as globalized business operation, technology advancement, increasingly demanding customers and integrated supply chains. To approach to the current challenges, some companies intend to apply newly developed methods to improve the performance of warehouse for example, warehouse management system. A WMS or warehouse management system mainly targets to manage the flow and storage of goods within the warehouse, in addition to some other associated operations occur in the entire warehousing processes including receiving, put away, order picking, and shipping. Moreover, a warehouse management system can be shortly interpreted as a computer application with

database of all warehouse transactions that assist to strengthen operation efficiency by recording accurate inventory and directing cutaways. (Ramma 2012)

Advantages of implementing a WMS or warehouse management system include improved operational accuracy, reduced labor costs (firms achieve cost-saving purpose when they use WMS to control warehouse instead of labor work) and a shorter cycle time to better serve customers. A warehouse management system can lead to reduced inventory as well as larger storage capacity. A more effective way in receiving process may result in a stock reduction, and this reduction is not so visible to have impact on the overall inventory amount. Apart from the impact on the factors like demand volatility and lead time that influence the inventory level, warehouse management system is also instrumental in leading to more storage capacity. (Poon et al 2009)

It is necessary to notice about the considerable investment and potential time period required for a company to implement warehouse management system, which should be justified with the profits might gained after implementation. The justification is better to refer to a comparative analysis of the operation undertook by the current warehouse and the operation adjusted by the warehouse management system. And meanwhile, firms also need to be ready for the possible transformation of the system storage and entire process. Studies show that with implementation of warehouse management system and altered operation procedures, companies will be able to achieve the goal of accuracy enhancement, increasing efficiency and cost-saving. (Ramma 2012)

Warehousing management is always viewed as an important part within a supply chain. A well designed warehouse system can largely help a firm to increase the efficiency in controlling inventory as well as to reduce the unnecessary wastes carrying in the entire process. Therefore, it has become a common issue for companies to develop a valid method to allocate warehouse resources in the most effective way to control the operation costs and ensure the productivity. (Poon et al, 2009). And it is also important for companies to notice the sources of factors that may have impact on the storage assignment, including trends of demand, product characteristics, size and layout of the physical warehousing system, method of order-picking, system of material handling and turnover rates. Exclusive studies have suggested that choosing favorable storage allocation policies (class-based, dedicated or random) and routing means with consideration about those

influential factors could contribute to a possible way to increase warehousing operational effectiveness. (Chan et al,2011).

Warehouse location

Facility location plannings play a significant role in supply chain. According to Bender et al., facility location plannings can be distinguished into three levels as strategic, tactical and operational based on the time horizon. In the work of Levi, decisions of strategic level always impact a company in a long-lasting way. Strategic decisions usually deal with problems about facility location models, mainly regarding the "number, location and capacities of warehouses and manufacturing plants, or the flow of material through the logistics network". The statement reveals Chan et al's view that there exist a solid link between strategic supply chain management and facility location models. Normally, facility location decisions are made on the strategic level rather than tactical or operational level, yet some other logistic activities are conducted tactically and even operationally, such as the management of inventory, warehouse layout and capacity, arrangement of transportation(modes and routing) etc. The determination of facility location models turns out to be a vital part to ensure warehousing operational efficiency, which affect the storage and control of various of merchandise in the warehouse. (Chan et al,2011)

It is necessary to consider various factors when a company decides to put a new warehouse into use. Wisser (1999) claims that factors such as facility's location and capacity, warehouse layout, labor force availability, distribution channels, transportation routing and other requirements should be taken into account to make the right choice for a proper warehouse. Among the above factors, choosing the best facility location for the warehouse is believed to be the most critical. Firstly, a warehouse is needed to be settled in a region that near to the target market and consumers, so that goods can be stored and delivered in a prompt way. The second important factor that required to be considered is the costs carrying in the operation, mainly indicating the transportation costs from manufacture to warehouse, and the costs to convey goods from facility to consumers. Another factor should be considered refer to the proximity of the facility location to carrier facilities. Acquiring an all-inclusive method to combine warehousing and transportation, or shorten the distance between warehouse facility and carrier will enable the most efficient performance.

According to Wang and Adam(2003), domestic or international distributors have to take these two issues into consideration when making decision on warehouse plannings. One of them concerns the physical location of the facility as the facility location is said to largely affect the extent of market coverage. While another issue concerns the establishment of an efficient distribution network, which has to rely on the collective work of a warehouse and distribution centers in framing a distribution network fit with transportation system. The solution of the first issue is required to be settled with regards on the second.

2.4 Distribution Center

Defined by Wang and Adam(2003) in their literature, Distribution center is normally built in the form of a warehouse or building with the use purpose for storing goods that will be distributed to wholesalers, retailers and end customers. There are types of similar facilities that can be viewed as distribution centers including warehouses, fulfillment centers, centers for package handling, bulk break centers and cross-dock facilities. Similarly with warehouse, the name of a distribution center has to do with its function and operation purposes. For instance, an order fulfillment center is obviously working with the order implementation and distribution of goods to customers. In the same way, a distribution center for retailers refer to facilities that transport goods directly to retail stores. And a cross-dock facility is commonly conducting operations to distribute goods to target destinations but stores few goods.

The term “distribution center (DC)” has once noticed by Ecklund in his work that, it is more appropriate to describe the term in referring to all the related activities occur throughout warehousing operations that might provide broader ranger of value-added services, in addition to the typical works serves to accomplish customer orders. (Ecklund, 2010)

Distribution centers could never function in an isolated way. The concept of distribution center and warehousing used to be discussed as collective entities. They work together to frame a efficient distribution network consist of nodes intersected by channels (terminals, ports, freight lanes) connecting manufacturers, suppliers, retailers, consumers etc. Supply chains are made of some or many nodes and lines of the network. And the

intrinsic nature of the network contributes to the effectiveness and efficiency of the supply chain. Although supply chain is commonly designed strategically and reflect the geographical distribution of resources, the network constructed by distribution centers and warehouses largely affect the agility of supply chain in distributing goods and materials as well as the prompt response to the market.

Generally, distribution center provide extra efficiency and effectiveness to supply chains in the way by reducing transportation costs, ensuring shipment of products to customers,performing a broader scope of value added services (labeling, repackaging, assembling, reverse logistics and customer services) as well as shorten the proximity to target market and allows agile distribution to customers . (Ecklund, 2010)

When making decisions on the location of distribution centers, it is essential to take major target markets into consideration. Since the infrastructure of distribution network largely affect the geographical distribution of consumer products and on the other round, shift of consumer segmentation also influence the framework of distribution network on the adjustment of the infrastructure system. Thus, it is particularly necessary to weigh the geographical shift of consumers in the long-term designing of freight system.

Due to the special relationships between distribution center and target market, the location of a distribution center is normally determined in accordance to the range of the major markets and customers, supply nodes within the distribution network, transportation costs for traveling among these supply points,volume of goods demand and customized services required. Other local conditions should also be considered such as costs of building and land, labor work, infrastructure of information technology, models of transportation and local government policies.(taxes, incentives, environment laws, business principles etc.) (Ecklund, 2010)

Simple distribution center outline

Distribution center planning often plays a complicated role in the reality as most of distribution centers serve more than one clients, both large and small. Distribution centers that offer specific services usually work for multiple firms instead of a specific one. But a simple distribution center can be viewed as a part in the supply chain which perform specific services.

Another important tip in designing for distribution centers is to to decide the number of facility. Wang and Adam has stated in their work that larger number of distribution centers in the network will help to shorten the distance to the target customers and broaden the coverage of market. Planners of supply chain also determine the locations of distribution centers as well as the quantity of facilities.

Ackerman and Brewer (2001,Kotzab and Bjerre 2005) have complemented that there are some other issues that remain challenging for both warehouse and distribution centers for now and future. These challenges include skill training and job assigning for labor forces. What's more, making right decisions on facility choosing will aid firms to realize the purposes of cost saving. And by offering specialized services with storing facilities, firms can better serve their customers. (Perreault & McCarthy, 2003).

2.5 Distribution Network and Channels

According to certain literature, for example, Teo and Shu's work which states that a company should establish an efficient distribution network to provide services at the lowest costs, given the current competitive market environment. In some cases, companies could save a lot of spending in logistic activities and enhance operational performance through reforming and improving the distribution network. In order to reach to this goal, a desired distribution network should be created with optimal location, size and number of warehouses to provide assistance to inventory management operations of retailers.

Some major characteristics of an efficient distribution network may contain:

1) Time used to respond to the market,
2) Variety and availability of products to customers,
3) Visibility of orders,
4) Level of operation centralization, and
5) Capacity and accessibility of transportation.

Response time to market usually decided by the proximity to the target market and customers. The variety and availability of goods to consumers always reflect a company's strategy of supply chain management as well as the design of distribution network. The

third characteristic depends on the integration of joint-working and information sharing among players in the supply chain including suppliers, distributors and retailers. Operation centralization indicates the degree of collaboration among individual distribution centers in the network to supplement each others market coverage. And the last characteristic largely decide the costs occur in transportation and distributors' agile response to market.

Chopra (2001) suggests that two things need to be considered by a company when making decision on distribution network. The first one concerns the delivery method of goods to consumers, whether the products will be distributed directly to customer locations or collected at a specific preordained place. And the second decision is related to the intermediaries that products may flow through.

In addition to the above two key decisions, Chopra also recommends us to take product characteristics into account when designing an appropriate distribution network. Those classifications of delivery network are created with their own strengths and weaknesses. Normally, a niche firm serve customers with single network operations while most of companies end up using collaboration of multiple distribution networks. The coordination among networks decided by product property and companies strategic plannings.

The efficiency of a distribution network can be assessed in two dimensions based on Chopra's ideas (2001) : whether consumer needs can be satisfied or not and the costs in fulfilling consumers' demand. How customer's needs can be fulfilled directly impact the firm's revenue and how much costs have been reduced decided the profitability of the distribution network.

Strategies about distribution channel management become increasing important and popular among businesses (Levi and Weitz, 2008). Since customer value has been addressed especially in the recent period, a shift of distribution networks from supportive strategy to a main stream has been resulted in. This is mostly due to the fact that a better distribution network will help to generate both cost saving and profit improving purposes for various industries. (Wise and Baumgartner,1999). Statements of Anderson and Narus (1990) show that a manufacturer's success is not only built by its own efforts, a good

distribution partner also plays a critical role in providing supportive operations to manufacturers in their way to achieve efficiency and effectiveness.

Many cases have shown that by developing new distribution channels will help a firm to gain sustainable competitive advantages. A good knowledge about rising changes in distribution channels can greatly help a company to maintain key success factors in the competitive business environment(Aaker, 2010). And the changing business market drives companies to seek for emerging ways to obtain sustainable competitive advantage through proper market orientation and collaboration of distribution channels in the supply chain (Hyvönen and Tuominen 2007).

The distribution network and channel designing is one of the challenges nowadays for many business companies. According to Ballou(2001), the problem is mainly about to configure the connection points within the supply chain network through which products will pass from the raw material manufactures to the end customers. In the other words, the problem of distribution channels refers to the determination on the location, size and number of plants, warehouses, ports, terminals and any spot in the range of supply chain network in which goods will be distributed and stored temporarily in the midway passing to the final consumption. A typical supply chain network may be designed in the similar way as following figure:

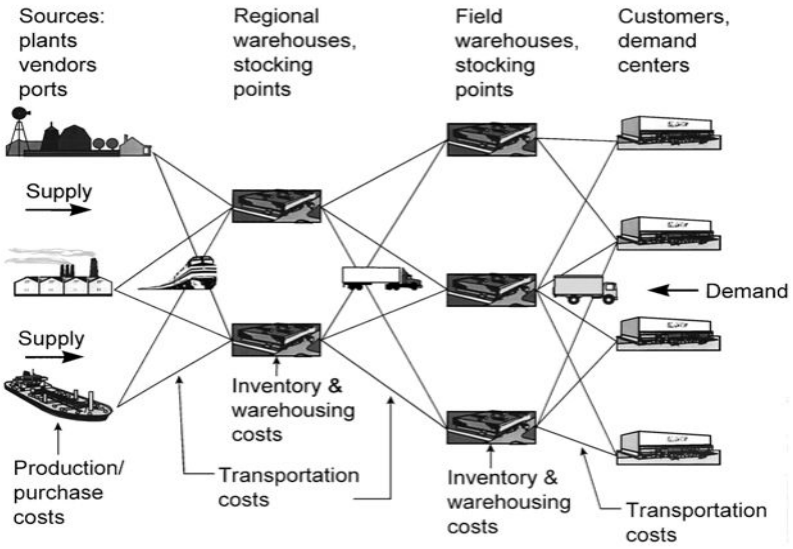
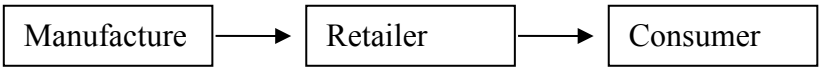


Figure 2.5 A typical supply chain network with associated costs

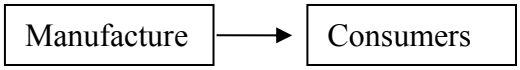
Source: Ballou, 2001

Decision on distribution channels means significantly important for companies who wish to enter multiple market segments. Management of distribution channels involves an approach of structure construction of optional distribution channels in which consideration about compatible channel connections are included. The role of supply chain services are increasingly important in designing the distribution channels and networks. Etzel, Walker and Stanton's (2004) work has provided some basic and dominant distribution channels from simple to multiple levels as shown below:

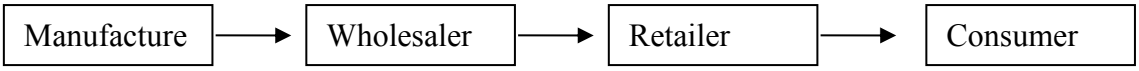
1. The most simple and direct way for distribution of consumer products that involves no intermediary



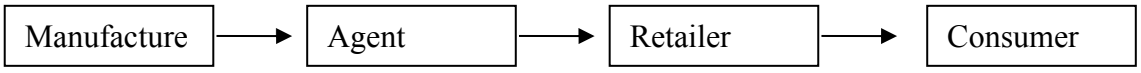
2. Retailers act as middlemen between producers and end customers when certain quantity of goods are demanded. So goods are transported directly from raw manufacture to large retailers and later sold to individual consumers.



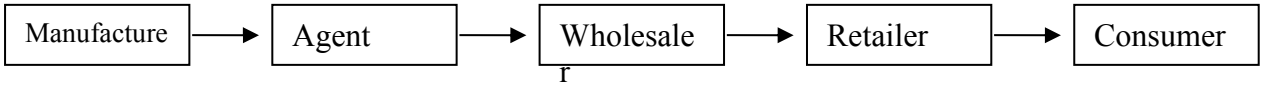
3. It is assumed to be the most traditional form of distribution channel for consumer goods which involves most of the players in the channel such as manufacture, wholesaler, retailer and customers It has been widely used as the number of retailers increase and both producers and retailers find this to be the most respectively economical choice.



4. In this form of distribution channel, the role of wholesaler is replaced by agents. Manufactures shift from relying on wholesalers to agents in reaching to broader retail markets.



5. This form looks more complex and involves almost all the partners in the distribution channel. But the relationship in the form can be interpreted in the way that, manufacture intend to gain easier access to small retailers through middle agents, who in turn cooperate with wholesalers for large retail market segments and individual retail shops.



While the literature of Kotler and Keller(2008,490) explain in a more detailed way when a system of multiple channel is being introduced. The multiple channel is used when a certain goods being sold to customers in the different markets. As hybrid connections are getting more and more important nowadays, for example, hybrid channel retailing and market channels. Hybrid association of market channels show that the use of a single channel is no more sufficient. The structure of hybrid channels provides optimized adjustability and control as well as the channel coverage. And meanwhile minimize operation costs and potential conflicts. As consequence, channels for different clients and markets should be developed (Kotler/Keller, 2008, 490).

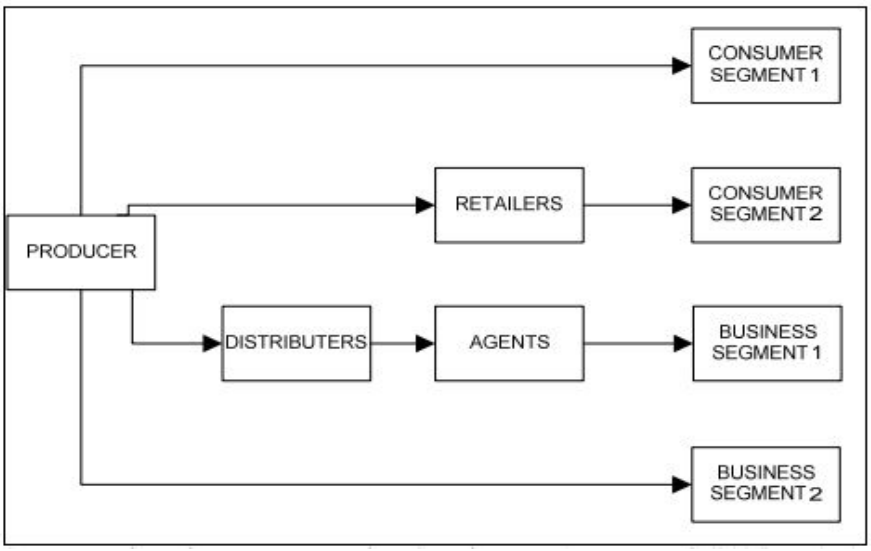


Figure 2.6 Hybrid distribution channels

(Source: Kotler, Ph.; Wong, Veronica; Saunders, J.; Armstrong, G.(2006): Principles of Marketing, Pearson Education Limiter, Prentice-Hall, 2005., Translation, MATE, Zagreb, p. 870.)

2.6 Distribution Related to Marketing and Retailing

Distribution channel is assumed to be closely linked to many other marketing strategies according to the work of Kotler and Keller (2008). They claimed that distribution may have certain impact on sales, especially in the case when product is not available for selling while consumers can not wait until goods can be reached. Distribution is often therefore viewed as a very critical part of goods that influence customer satisfaction.

Kotzab (2005) define distribution as the total sum of all activities and related organizations, which are necessary to assurance a successful connection between production and consumption. According to this definition, distribution must pay an important role in retailing industry; therefore retailing obviously plays part of distribution. Retailing is a part of distribution and is closely connected with the concept of marketing channel (Coughlan et al., 2001).

2.7 JIT (Just-in-Time) system

The concept of Just-in-Time system was initially presented by the Ford Motor Company and later has been successfully applied by Toyota Motor Corporation. JIT system is getting widely popular in various business and particularly in the auto industry because to many business companies, inventory requires large storage rooms, heavy for moving and expensive. Just-in-Time system can be simply interpreted as a system that enables right materials of right quantities to be delivered to the right customers in the right place at the right time. Thus, efficient application of JIT system largely depends on the responsiveness and co-work among suppliers and other players in the supply chain network.The quality of components and materials flow through JIT systems should be addressed since no buffer substitution will be enough to replace the faulty or damaged parts (Ford, 2003).

As a theory worth mentioning regarding improving the efficiency in inventory management and saving overall costs, Just-in-time inventory system can enables a company to maintain a continuous production flow throughout the supply chain by producing with the right material, in the exact quantity, at the right place and at the right time. With the application of Just-in-time system, carrying costs of inventory will be much less and capital turnover ratio will be improved. (Yasuhiro Monden,2011) One obvious benefit of JIT system is that it helps to lower total costs incur within the system as well as reducing inventory and waste while offer better product quality. A number of plants have less inventory over fifty-percent and lead time more than eighty-percent due to the implementation of JIT process (Droge, 1998).

As JIT is featured with system integration which enables information sharing among actors within the supply chain, the relationship between supplier and customer is likely to be as partners. This also allows more transparency along the entire supply chain which boost the two major objectives of supply chain management, namely, lower costs and better responsiveness. Moreover, practiced by many companies and their own suppliers as a kind of supplier-customer partnership idea, JIT is believed to be useful in cutting both design and response lead time. This is usually realized in form of systems integration, which emphasizes the cooperation between different functional system departments and fills up the gap between supplier and customer.(Pragman).

JIT implementation provide a number of benefits including obvious profits, reduction in set-up time, increased productivity, better product quality improved worker manager relations and teamwork performance. "JIT reduces administrative costs for both the customer and supplier because the purchasing costs are not all on the customer and the supplier gets all the business from that specific customer as it wants as long as things go well."(Pragman).

2.8 Development of information technology in supply chain management

According to Sambamurthy et al's work (2003), the development of information technology (IT) provides innovations in supply chain management which generate new ways for companies to manage supply chain relationships. Many famous companies including Wal-Mart, Cisco, Dell attempt to use information technology to manage supply chain processes from upstream procurement, manufacture, to downstream market retailing and customer services (Lee 2002).

One important role that information technology plays in the supply chain is that it enables information freely flow among players in the chain system including suppliers, manufacturers, distributors and retailers. (Wang and Adam) In addition to the free flow of information, Lee(2000, p.31) complements that the application of information technology in overall supply chain has been paid more attention and the key purpose is to realize the flow of goods, finance and information throughout the supply network which mainly built up by suppliers, manufacturers, distributors and consumers.

As what Ecklund (2010) has brought up in his literature, Information technology has long played a significant role in the strategy decision of supply chain integration, warehousing and distribution center. It will continue to be an essential tool in the supply chain context as information system is assumed to provide assistance to the management of inventory, arrangement of storage, process of orders, coordination of shipping and etc.

Information technology is one of the key elements that drive the successful operation of distribution center. Long-standing forecasts provide information that can be used to estimate facility capacity including the number, size and location of distribution centers, required labor force and so forth. Short term forecasts enable firms to decide the requirements about space, capacity, and labor according to the periodical project. That's why information technology has been regarded as essential in the efficient management of distribution centers. (Ecklund,2010)

Besides the essential role that information technology plays in the supply network, market retailing is also influenced by the revolution of information technology. Wang and Adam once stated that, the traditional composition of wholesaler, retailer and customer is being challenged by the exhaustive application of information technology used in business. E-commerce, B2B relationships, online retailer platforms, and new means of marketing channels have arisen to replace the old way of selling goods.

In an overall context, information technology enables costs reduction in the supply chain. It helps to digitally integrate working capabilities and to improve transaction efficiency in a substantial way. Easy communication and information sharing strongly support the performance improvement of supply chain. (Zhu and Kraemer 2005).

To realize the two major objectives of revenue generation and cost elimination by integrating supply, production and distribution with valid supply chain strategies, companies are required to draw support from information technology to promote updated information sharing, inter-firm communication platform and better coordination of resource allocation among related supply activities (Lee 2004). Added by Zhu and Kraemer (2002), the digital platforms function as an important role in building links among various supply resources and through this way to turn these resources into coexisting bundles that useful to each other.

The growth in available data about the freight system performance, warehousing operational efficiency, product pricing, and demand, coupled with the application of operations research theories, has led to production, distribution, and retail pricing that is more and more integrated." (Wang and Adam 2003)

2.9 Customer services

The focus of today's competition has already shifted to added value of product in addition to product itself, such as advertisement, label and packaging, delivery methods, customer services and all the other things that consumers may value. (Lindgreen and Wynstra 2005) Vargo and Lusch (2004) believe that there once existed a clear way to divide a product into goods and services. With time goes by, either "goods" or "service" is not sufficient to explain the real nature of the product sold nowadays. Goods and services are believed to be bundled to exchange. The separate line between goods and services have faded since nowadays' merchandise are characterized with combination of both goods and services. (Wise and Baumgartner, 1999)

Firms are looking for their own inimitable competitive advantages. Producers find it hard to distinguish their goods from competitors while services companies are more easier to differentiate them through sustainable strategies which results in higher margin for manufacturers. (Brown, 2000).

A framework proposed by Olivia and Kallenberge(2003) has been shown below, which shows a continuum change of which a company offers pure goods to absolute services. The term " absolute goods" and " intangible services" are not discrete concepts. The continuum diagram is made with pure commodity goods at one endpoints and pure services at the other endpoint. Mostly, products fall between these two points.

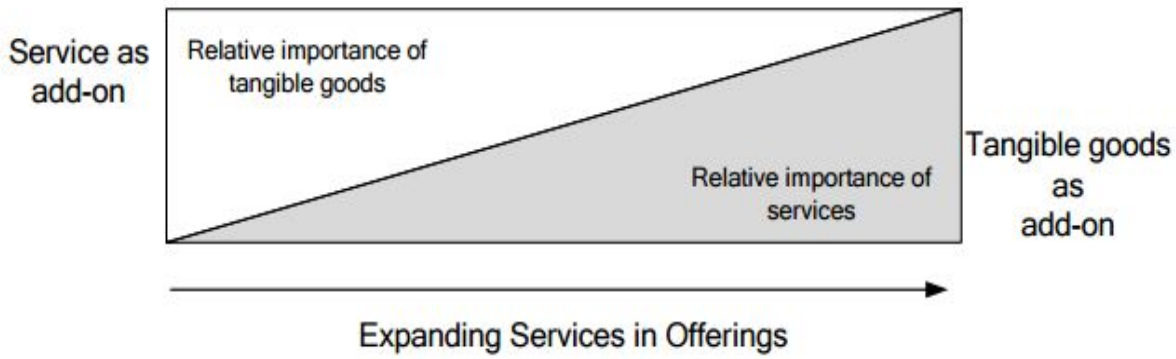


Figure 2.7 Product Service Continuum

Source: Oliva and Kallenberg, 2003, p.162

Customer service is described by Jonsson (2008) as "a number of activities involving the purchaser, the vendor and third parties, which aim to add value to the product" and includes "the entire process of filling the customer's order (either manual or electronic), managing the payment, picking and packing the goods, shipping the package, delivering the package, providing customer service for the end user and handling the possible return of goods" (Ballou, 2004). Outstanding customer service adds value throughout the supply chain. Customer service at the basic level balances availability, operational performance and reliability for all customers.Logistics service is an important element of customer service and helps an organization maintain its current competitive position in the marketplace (Langley and Holcomb, 1992).

According to Chopra (2001), customer services in the supply chain consist of many activities including product variety, product availability, response time, order visibility, customer experience and returnability. Most of these services are influenced by the nature of supply chain network that required to be put more focus on.

Product variety: refer to the category and number of products

Product availability: indicates the probability that holding products in stock when receiving orders from customers.

Response time: refer to the time from a customer places an order til obtain the delivery.

Order visibility: is the possibility for customers to follow their orders since the placement til arrival.

Returnability: refer to the possibility for consumers to return the unsatisfied products and the capability that a firm can deal with such problems.

Availability is the capacity to have the inventory as desired by the customer. Three main performance measures relating to availability are stock-out frequency, fill rate and orders shipped complete. Operational Performance deals with the time required to deliver a customer's order and is specified in terms of speed, consistency, flexibility and malfunction recovery. Service Reliability regards the combined attributes of logistics and relates to the firm's ability to perform all order-related activities as well as provide critical information and status updates on logistics operations. (Bowersox, Closs and Cooper 2010).

The focus of the basic customer service level is typically on operational aspects of logistics where the organization strives to provide the seven rights to its customers. These are to provide:

- the right amount of
- the right product
- at the right time
- at the right place
- in the right condition
- at the right price
- with the right information (Bowersox, Closs and Cooper 2010).

"The ultimate in logistics service is to do everything right and to do it right the first time". The highest level of commitment is perfect order performance which requires zero defects logistics operations and is therefore generally reserved for key customers. (Bowersox, Closs and Cooper 2010). The perfect order is an order that is:

- delivered complete
- delivered on time
- delivered at the right location
- delivered in perfect condition
- delivered with complete and accurate documentation (Bowersox, Closs and Cooper 2010).

The level of commitment to each dimension of service requires careful consideration of competitive performance and cost/benefits analysis. “A firm can provide logistics service equal to or even better than a competitor’s but still have dissatisfied customers. This may arise from the lack of knowledge of customer expectations, improper standards of performance, performance failure, poor communication or incorrect customer or firm perception of performance.” (Bowersox, Closs and Cooper 2010).

2.10 The role of synergy

The key point of synergy is that the entire system is more than the sum of all parts. Therefore, the cooperation of two or more businesses together will generate superior performance than these businesses work on their own.Synergy can be realized by leveraging assets and competencies including brand, global connection, warehouse, ordering system, distribution channels and so forth. Through synergy, the combined business system will obtain expected added customer value and profits, lower operating costs as well as reduced investments.Synergy among business units can provided truly sustainable competitive advantage that is based on the distinct features of a company and makes it hard for competitors to imitate. (Aaker,2010)

Osegowitsch and Madhok(2003) propose in their work that close relations between manufacturing and marketing can result in synergies. Suppliers who can penetrated into consumers’ decision making can also generate synergies. Taking an example of suppliers who become involved in customer inventory management, they get easier access to real-time and precise information about customer demand which is helpful in correctly adjusting a firm’s production plan.

To realize the two major objectives of revenue generation and cost elimination by synchronizing supply, production and distribution with valid supply chain strategies, companies are required to draw support from information technology to promote timely information sharing, inter-firm communication platform and better coordination of resource allocation among related supply activities (Lee 2004). Added by Zhu and Kraemer (2002), the digital platforms function as an important role in building links among various supply resources and through this way to turn these resources into

coexisting bundles that responsive to each other. This notion is also consistent with the idea to build resource synergy as promoted by the resource-based view (Conner 1991).

Chapter Summary

The chapter has illustrated some major schools of theories relating to supply chain and logistic concepts. Each theory can strongly support the view that supply chain management plays an important role in providing added value and competence to the firms. Some of them explain how to reduce and eliminate costs carrying in the logistic operations, seek for the optimal amount of inventory from the given reference of demand, decide the locations and functions of warehouse and distribution centers, formulate the most proper levels and structures of distribution networks, and how information technology help to create efficient operations within supply chain management as well as the real success built with Just-in-Time system. All these theoretical thoughts provided an academic background for developing the following chapter and the study analysis of actual market situation.

Chapter Three: Methodology

In this chapter, the explanations of research strategy and research approaches used in this thesis are displayed. The methods will be illustrated and reasoned with detailed context as well as the strategies exploited in this research. Results of data collection will also be given. At the end of this chapter, deep analysis based on the empirical findings will be provided.

3.1 Research Strategy

According to Slierman (2007), various research methodologies are available for authors to select referring to data gathering, case study and data analysis etc. And in this thesis, we plan to take qualitative study to be the prior methodology. As what Miles and Huberman (1994) mentioned in their work, researchers who apply qualitative methods often work with small study samples, conduct in-depth analysis mainly within a certain context. This makes qualitative research largely distinct from quantitative studies which targets at massive cases, numbers, calculations and results of statistical analysis. One important characteristic of qualitative method exists as it enables flexibility of gathering necessary data and explaining them with related theories.

In this thesis, we have constructed a research strategy which is customized to thesis purpose. We will use qualitative research method following with comparative research. A case study of Norwegian salmon industry is chosen as an observation in logistics and retailing business in this research. The multi-data collection methods are employed from various sources of data to ensure the validity and reliability of the research. The sources of data include the Norway salmon annual report. Additionally, we conduct the interview with some supply chain members such as supplier, company that provide transportation services and distributors and retailers in China. We also include both primary and secondary data throughout the data collection and analysis part. Subsequently, a description of the data analysis followed by the validity and reliability of this thesis are provided.

3.2 Qualitative Research

Two major purpose of qualitative research are seeking for the reason "why" and "how" the topic is analyzed based on the given information (Yin, 1994).

3.3 Data collection

We use two main data collection. First, the primary data is from the survey and interviews. The secondary data gives supporting data in to fulfill the gap from the interviews in this thesis. Both data collection methods are explained below.

3.3.1 Primary data

Data is collected from the interviews with several parties involve with Chinese firms, agents and consumers. We will apply an in-depth interview in retrieving primary data. The interviewees are involved firms personal, transportation firm, and sub-distributors. Most of the interviews are executed by telephone and internet. Details in the process are comprised further from secondary data. We will cross-check data with the secondary data, which is explained later, to validate the information.

In order to collect primary data to get better understanding of Chinese consumers' preference of Norwegian salmon, we have conducted an simple survey involved with 200 consumers living in the top three cities with highest average income level in China. Most of these survey consumers are aged from 20 to 60, including both male and female with different social background and income level.

The survey has been made by posting the following questions to the survey population:

1) Have you ever heard or tasted original Norwegian salmon before?
2) Do you think Norwegian salmon tastes good?
3) How often do you consume Norwegian salmon?
4) At what kinds of places or through which channels do you consume Norwegian salmon in China?

5) Do you think the price of real Norwegian salmon available in Chinese market is suitable? and

6) What do you think would be the most proper price range of Norwegian salmon in Chinese market?

The result of the survey has shown that the consumption of Norwegian salmon is mainly a trend among younger generations within 20s to 40s population. People of this age range generally made more consumption on Norwegian salmon compared with other age period. Most of our survey consumers have heard about Atlantic salmon and those who have tried Norwegian salmon before have expressed their favorite of it. We also found that people with monthly salary between 5000 to 10000 purchase Norwegian salmon the most but the major portion of our survey consumers don't consume it in a frequent manner.

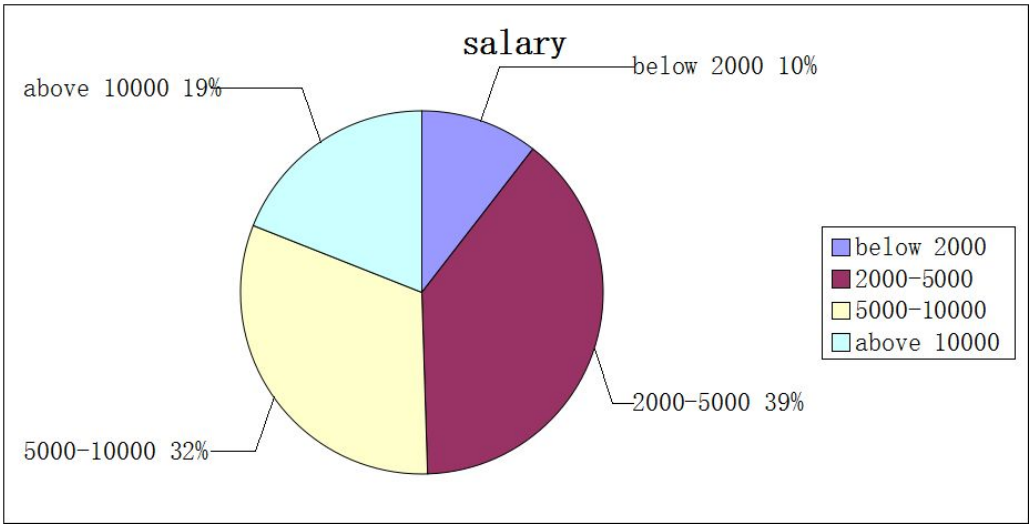


Figure 3.1 Survey results in terms of salary

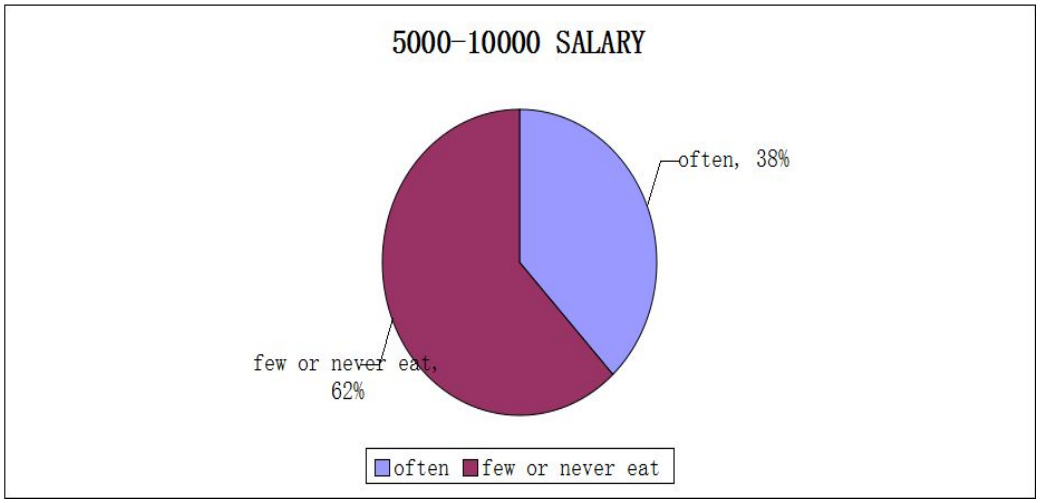


Figure 3.2 Possibility of salmon consumption for people of 5000-10000 monthly salary

Restaurant is shown to be the places through which people get the easiest access to Norwegian salmon. Super markets ranges second but market availability of Norwegian salmon in these big cities is still relatively low. And few people are wishing to purchase trough online shops as most of consumers are concerning the quality and safety of goods sold by internet retailers since many cheap products are found to substitute the real salmon originated from Norway.

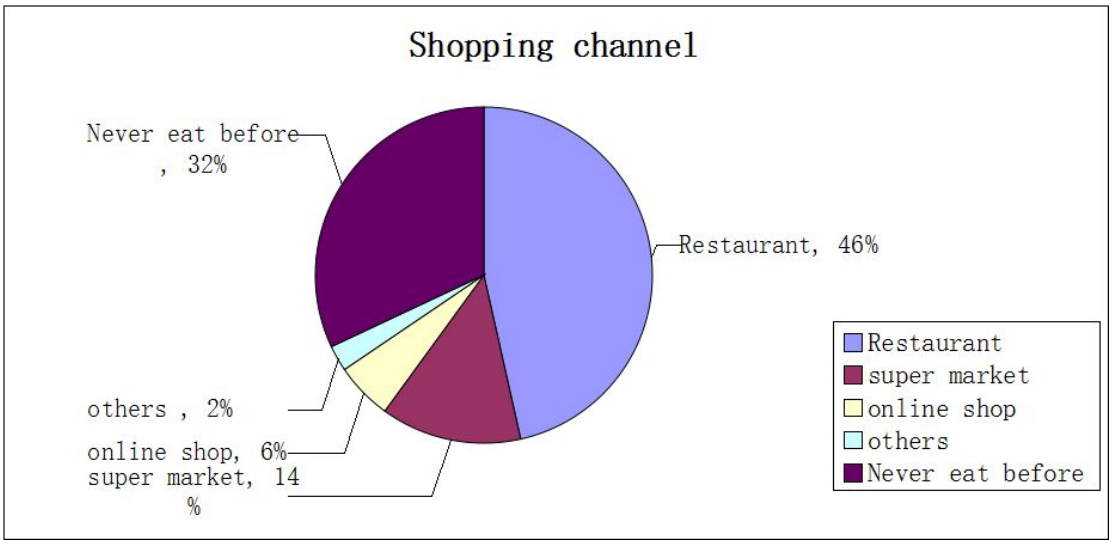


Figure 3.3 Composition of purchasing channels

Nearly 90 % of survey interviewees regard Norwegian salmon as luxury foods and the general selling price is thought to be high when compared with other imported salmon from Chili, USA, Canada etc. Given the current retailing price of Norwegian salmon in China, more than 50% of our survey consumers are expecting a lower price between 50 to 100 Chinese yuan to be established to meet more and more needs in the future.

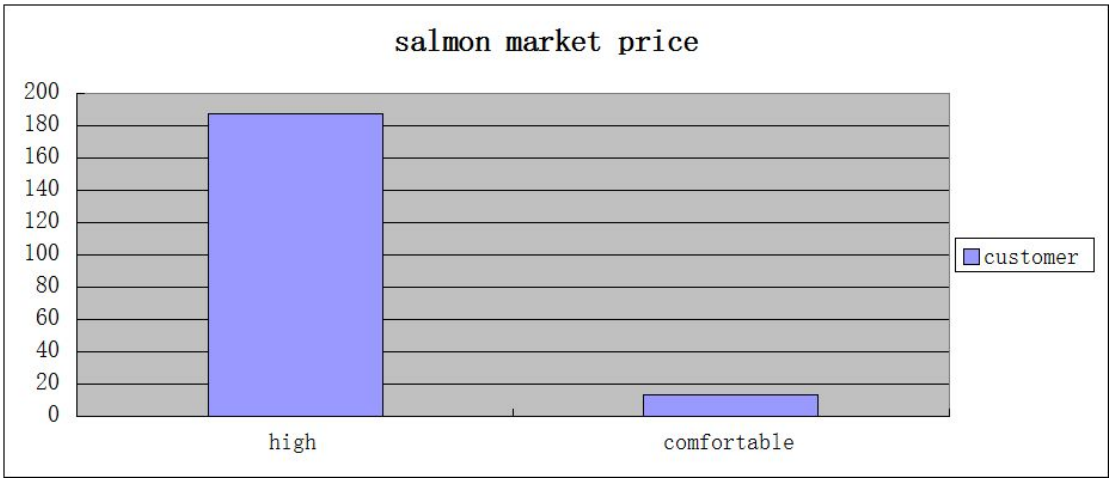


Figure 3.4 Salmon market price

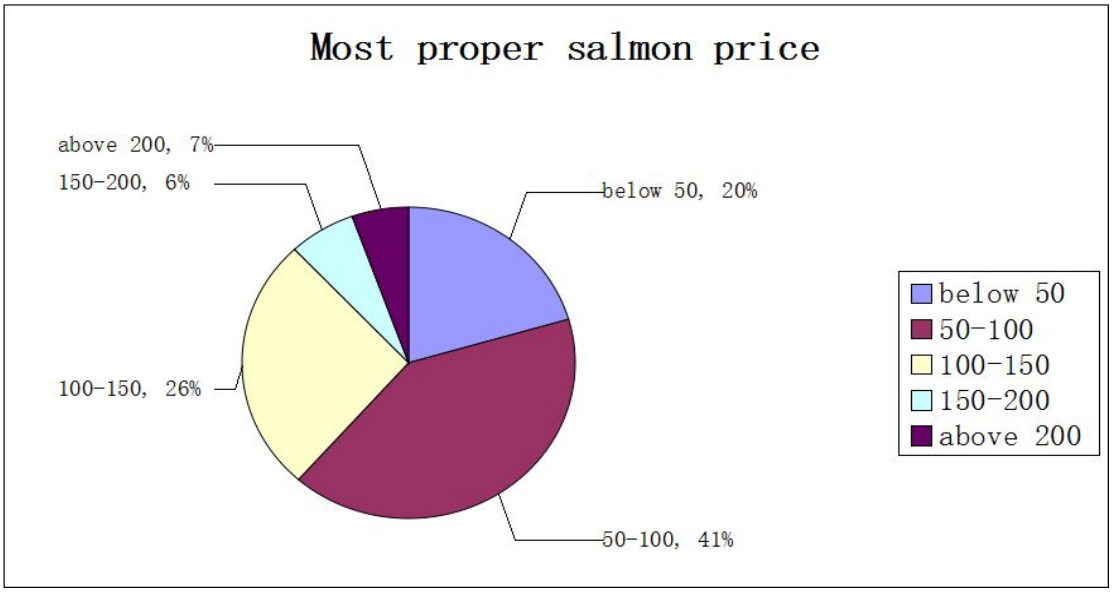


Figure 3.5 Expected price level

3.4 Analysis Empirical Material

3.4.1 Trends, issues and development of Norwegian salmon

According to recent statistics, the price of exported Norwegian fresh whole salmon increased 36% in the first two months of 2014 compared to the former year. While the volume of export almost keep the same level, and the market portion of the three leading export countries all experienced a substantial drop: 19% for Russia, 12% for Poland and 11% for France. Seafood exporters in Norway have jointly exploited the major international market during recent years, leaving few places for the rest export nations to compete with them. Thus, the demand of Norwegian salmon through year 2014 continue to expand which is assumed to be strong enough to fence its prices. Lately established statistics by Norwegian Seafood Council reveal that, salmon and trout are recorded to be

exported totally for 46.2 billion NOK throughout the year 2014, in which salmon exported for 43.9 billion NOK. It is about 11% increase compared to 2013 and is assumed to be the highest export level ever.

Since the beginning of Russian import ban in August of 2014, the export of Norwegian seafood to EU countries grew in a significant manner. Poland become the biggest export market for Norwegian salmon among all the EU countries. United Kingdom is the most important growth market. Export to Asia and USA present an obvious upward trend but the volumes export to Eastern Europe declined dramatically by 37 % compared to year 2013, reached to a total amount of 3.56 billion NOK.

Strong demand and raising production of Norwegian salmon contribute to a newly set export record with an average export price equals to 41.06 NOK per kg in 2014, 1.35 NOK or 3.4 % more than the price set in 2013. And the price for exporting fresh whole salmon was found to be fluctuated from 34.96 NOK per kg in September to 48.88 NOK per kg in January.

Table 3.1 Export of Norwegian Salmon 2013-2014

Year	2013	2014
Total Export Value	39.8 billion NOK	46.2 billion NOK
Average Export Price	39.7 NOK /kg	41.6 NOK/kg
Top Export Market	◆ France accounts for 30% of total export volume ◆ Poland (development of large process industry), USA (Increase by 19%) ◆ Russia and Asia (dramatic drop)	◆ Poland has become the most important market, instead of France ◆ UK (biggest growth market) ◆ Asia and USA (continue to increase) ◆ Eastern Europe (drop 37%)

Source: Norwegian Seafood Council

Opportunities

Given that fish export accounts for an essential proportion of Norwegian economy and national total exportation, international market environment is particularly important to the future development of fishery industries. Meanwhile it is necessary for Norwegian fish sectors to notice all the potential issues exists for the current entire industry and obstacles in extending further global markets.

Abundant natural resource

Marine fish resource is one of the various natural resources in Norway which has been well managed so far. The expansion of aquaculture and fishery industry can be foreseen, and the development of Norwegian seafood production will therefore greet its new era.

Increasing demand both national and international

There is an increasing trend for both national and international consumption on Norwegian seafood. And the increasing demand of Norwegian seafood worldwide also helps to boost the further growth of Norwegian fishery industry.

Market access

Reaching to new markets has become a prior issue for the further growth of Norwegian fishery industry. But through the assistance of national authorities, a number of trade agreements have been made to obtain easier access to some major global markets including EU and Asia countries. Despite the fact that Norway is not yet one of the EU members, it seems that few problems exists to stand in the way for Norway to become the most dependent seafood supplier for EU and other international markets. Under the framework of the EEA (European Economic Area) agreement since January 1994, Norway has collaborated with individual countries, inter-country bodies like EU, international organizations including WTO (World Trade Organization) and OECD (Organization for Economic Co-operation and Development) on formulation of trade policies.

Government and non-government sector policies and development strategies

Processing factories and fishing vessels are mostly owned and run by private individuals, with public infrastructure and services. The growth of fishery industry is

largely driven and regulated by the incentives and development strategies launched by Norwegian government and non-government sectors. Since 1998, Norwegian Parliament has adopted a master plan for the further development of Norwegian fisheries containing main elements of products innovation, market expansion and environment responsibility.And the White Paper produced by the government in March 2002 addressed the need for sustainable development and management integration.

Constraints

Higher operation costs

One of the main constrains for the future development of Norwegian fishery industry is the high costs carrying in the operation. Expensive labor force, for example, contributes to a great portion of total costs for many Norwegian firms and limits their competence in the global business environment to some extent. Luckily, it has been partially compensated by the improved efficiency brought by the innovation of mechanization and information technology in the recent years.

High costs affect export prices

Control salmon export price efficient supply chain and logistic management.

Labor costs in Norway is very high compared to other countries, up a variety of materials directly affects the export price.

Falling market price

Global price for frozen fish has presented a downward trend for some while mainly due to the rising cheaper similar fish products from South America, Alaska, Russia and Asia. Taking Chinese market for example, countries of origin for salmon sold in China ranged from Norway to Scotland, Denmark, Chile, with some volume coming from Canada, Australia and Ireland for year 2013. There is also a small volume of silver salmon and chum salmon from Alaska and Hokkaido. Large volumes of Pacific salmon imported from the USA and Russia are mainly for processing and re-export to the US and EU markets as well. The falling prices before year 2012 has finally bounced back to 39.7/kg in 2013 based on the figures released by Norwegian Seafood Council (NSC) and the export price of Norwegian salmon reached to 41.6/kg in 2014, but with large fluctuation throughout the whole year.

Trade barriers

Newly established trade barriers on processed fish products by European Union such as increased custom duty, also have certain impact on the profitability and performance of the Norwegian fishery industry and the result will continue to be influential.

Competition from other marine activities

One constrain that could influence the aquaculture and fisheries is from the competition of other marine businesses including offshore oil industry, sea transport, tourism and recreational activities. Norwegian government has attempted to avoid and deal with these possible conflicts through development plans.

Increasing address on the seafood safety and quality

There is an increasing trend for both national and international consumption on Norwegian seafood., meanwhile the rising demand comes along with more requirement on the quality and safety of the fish products. Thus, Norwegian Food Safety Authority has claimed that they will be in charge of the fish health and quality of all the seafood products since the beginning of 2004. In addition to that, whether a license application is in line with the Animal Welfare Act will also be under the decision of them. As what aquaculture regulation has stated, it is essential to address on the welfare of the animals as both from ethical perspectives and product quality ensuring. Other international codes relating to ensuring food safety include the *Codex Alimentarius* which co-established by WTO and FAO.

Legal Framework

Through the co-work of Norwegian government authorities and representatives of fishing industry, the process of formulating regulatory regime has stepped into a new chapter as the following final management strategies have been decided:

Three basic Acts are established to regulate the fishing operations including the regulation on the participation in fisheries, policies relating to salt water fisheries and the marine resources. Besides, the aquaculture Act establish the responsibilities of the aquaculture's future development as well as the duties carrying for the environment. The economic interest and environmental profitability are both promoted under the project of sustainable growth.

3.4.2 Salmon consuming business and its trend in Chinese market

Norwegian exporters are attempting to build cooperation with Norwegian Seafood Council in the hope to push more consumption of Norwegian salmon in Asian markets. Companies who hold such desire are wishing to take as much as benefits from the increasing consumption. While potential problems still stand in the way of the market expansion of Atlantic salmon in China. Some analyst hold the point of view that fluctuated supply volume, relative high costs and export prices contribute to the major reasons to the shrinking share of Norwegian salmon in Chinese market. People are getting doubt about the most appropriate way to change such situation in order to prevent Norwegian originated salmon being replaced by the other substitute products widely sold within Chinese market.

Unstable supply of Norwegian salmon

Export statistics show that Norwegian salmon export to China was reported to be more than 6,000t in the first half of 2010, but fall to less than 3,000 metric tonnes in the first half of 2011. This number was up to above 5,000t in the first half of 2012, but down again to less than 4,000t in the first half of 2013. For year 2014, a recovery has been reported of late, with 6,377t fresh salmon finding their way to China in the first eight months of the year, a near 20% growth year-on-year. Sigmund Bjorgo, who is positioned as Chinese office director of Norwegian salmon council estimated that, Norway's exports to China should have totaled 17,500t for the first half of 2014, instead, they were just 31% of this.

Unevenly distributed market and increasing competition pressure from other salmon origin countries

Given that fish export accounts for an essential proportion of Norwegian economy and national total exportation, international market environment is particularly important to the future development of fishery industries. Global price for frozen fish has presented a downward trend for some while mainly due to the rising cheaper similar fish products originated from South America, Alaska, Russia and Asia.

In 2013, countries of origin for salmon sold in the Chinese markets ranged from Norway to Scotland, Denmark, Chile, with some volume coming from Canada, Australia and Ireland. There is also a small volume of silver salmon and chum salmon from Alaska and Hokkaido. Large volumes of Pacific salmon imported from the USA and Russia are mainly for processing and re-export to the US and EU markets.

The market share of Norwegian fresh salmon used to be over 90% in China before 2010, yet this percentage has dropped to 30% now. And it could be less in the future with increasing entering of other salmon origin countries into Chinese market.Chile has become the major supplying country at present following Norway. Exports of fresh Chilean salmon to China are set to soar, according to the pioneer of the fresh trade into the southern port city of Guangzhou. Traditionally, shipments from Chile have been in frozen format, however fresh shipments to China will increase from 30,000 tons in 2013 to 40,000 tons in 2014.

While compared with Chile, the second important origin country of salmon which was assumed to sold Atlantic salmon weighted as 11,400 tonnes to China through the year 2014. The figure is found to be increased by 20% more than the previous year all due to the growing Chilean production from 2013 to 2014. As Chile was attempting to expand new markets for the rising production volume in 2013, Asia markets were just found to have the matched demand which is also increasing fast. (undercurrentnews.com)

Consumers popularity and buying power

According to the analysis conducted by FAO, consumption of seafood is usually changing due to the preservation approach and product species. A major contribution to this is the urbanization of the population which leads to increasing sales of ready-to-eat frozen products. Another contribution is the single-person households, and the share of this trend has risen from 4% to 18% during year 1960 to 2009 in Norway mainland. Besides, the age of population is also one of the factors that affect the consumption of seafood. The consumer group of age 50 and above accounts for more than 33% of the total Norwegian national population right now which consume 60% of seafood production overall.

The consumption in of salmon in China has been considerably influenced by some of the factors mentioned in the above text including the urbanization of the population, the age of population and income level.Imports of fresh chilled salmon were initiated with some promotional activities launched in these big cities such as Beijing, Shanghai and Guangzhou some years ago. In the early stages of development, consumers could find Norwegian fresh chilled salmon only at special counters of supermarkets, buffet restaurants in hotels, or at Japanese restaurants. Due to the limited development of urbanization, most of Chinese consumers have few knowledge about real salmon, except that fresh salmon is rich of nutritious and suitable for consumption in its raw form. But a general lack of official standards and awareness in terms of varieties, preparation methods and criteria for freshness is rooted deep among Chinese population.

The buying power is assumed to be closely related to income level. Our results indicate that people with income of 5,000 to 10,000 Chinese yuan has become the major consumption population of Norwegian salmon. And this monthly salary level constructs around one third of our survey groups, given that the survey has been conducted among the consumers in the top three cities with highest income level in China which are listed below:

1) Shanghai

Shanghai ranks the first place with the highest monthly average salary equals to 7,214 Chinese yuan.

2) Beijing

Beijing is the national capital and positions second with 6,947 yuan as monthly average salary.

3) Shenzhen

Shenzhen located in the south part of China and is well known as the window to China's reform and opening up process. The average monthly salary in Shenzhen is reported to be 6,819 yuan, just a few less than that of Beijing. (Chinadaily.com)

As the market developed, chain stores specializing in salmon were launched in South China. In 2013, consumers are increasingly buying salmon products through e-commerce, and target consumer groups include the young 20s to 30s demographic. The baby food market is also expected to grow in the future. While most of consumption

groups are aged young and with low income levels, consumers of 50s or above which contributes to the major market shares of salmon within Norwegian mainland are waiting for excavation in China.

Substitution of Norwegian salmon in Chinese market

To meet the increasing demand of salmon in Chinese market, a large portion of labeled "Norwegian salmon" sold by retailers are found to be trout or salmon that originated from other countries instead. According to related market research, the salmon demand in China remain significant currently with about 40% increase per year. But findings reveal that only 20% of salmon available in Chinese market are really produced in Norway, with the rest substituted by the other kinds of fish or salmon imported from countries like Chili, Canada, USA etc. Such high substitution rate of Norwegian salmon may have unexpected consequences on the export of real Norwegian salmon, meanwhile affect the brand reputation of real Norwegian salmon. (the quality and price of substitute salmon vary a lot). According to one of the largest salmon farming firms in China, Oriental Ocean Sci-Tech Co., Ltd yearly produce 1000 tonnes of freshwater aquaculture fish including rainbow trout and steelhead trout, both of which are the major substitution products in Chinese market. (Globefish.org)

The reasons behind this situations in Chinese salmon market are inconclusive. Some argue that the limitations of Norwegian governmental policies on salmon cultivation certifications, rising price of fish feed, costs in manufacturing and related inbound activities result in higher costs of exporting salmon. As consequence, importers and intermediate merchants in China generate lower profits than before, which drives them to switch to cheaper salmons (either from other countries or from similar species, smuggling) and replace the real Norwegian salmon for higher profit margin.

Yet some believe that the obvious gap of market price between Norwegian salmon and the other salmon in Chinese domestic market caused by multiple retailers and distributors, who lift price layer by layer to earn abnormal profit constructs the main reason behind this. In other words, inefficiency may exists in the management process of Norwegian export firms on outbound activities such as distribution, transportation and retail in China.

3.4.3 Operation in logistic and supply chain perspectives

But how to reduce the market price gap and avoid the counterfeit products to be sold as the Norwegian salmon? Although most of Norwegian producers are wishing to increase their export to Asia markets, Chinese retailers and distributors found it is too hard to gain access to real Atlantic salmon. What might be the obstacles stand in the way that prevent the smooth flow of goods within the supply network? Here provide some research findings that reflect the current export and import mode between Norway and China mainly from supply chain perspectives.

Legal limitations on the production and operation which impact supply volume

Norwegian governmental policies on salmon cultivation certifications, fishing fleet, aquaculture, food quality and safety and costs in manufacturing cause the limitations on salmon production and export. Legal framework relating to the fishery industry are formulated to regulated business activities in the sector. Meanwhile these legal policies created barriers for both insiders in manufacturing and exporting fish products and outsiders who wish to enter this business sector.

Through the co-work of Norwegian government authorities and representatives of fishing industry, the process of formulating regulatory regime has stepped into a new chapter as the final laws and regulations regarding the fishing operations and aquaculture have been decided. Three basic Acts according to which the control of fishing licenses and other related operations for fishing fleet are established, including the regulation of the Participation in Fisheries, Act relating to Salt Water Fisheries and the Marine Resources. These legal Acts have been implemented in the purpose to control the business behaviors during daily operation and prevent the environment from being polluted. Both sustainable and economical profit are wishing to be achieved through the policy implementation.

The main purpose of the Aquaculture Act is to promote the profitability and competitiveness of the aquaculture industry within the framework of sustainable development.

The increasing address on the seafood quality and safety also create more stress on Norwegian suppliers. With rising demand of Norwegian seafood from both national and

international markets, Norwegian Food Safety Authority has claimed that they will be in charge of the fish health and quality of all the seafood products since the beginning of 2004. The Norwegian Food Safety Authority decides whether an application for a license is in compliance with the Animal Welfare Act.

Other similar codes and policies are established also including aquaculture regulations, the Animal Welfare Act, the Food Act and *Codex Alimentarius*(an international working relationships on ensuring safe food under the FAO/WTO organization) etc. All the legal regulations that have mentioned added up to set higher requirements for Norwegian suppliers and manufacturers to produce qualified seafood and limitations has been put in the half way to export fish products abroad.

Warehousing and distribution center

During recent years, many international business giants have made intensive investment in China for the local sub-divisions and branches including Apple, Nike and so forth. The relative lower labor cost in China definitely contributes to a major attractiveness. Comparing with most of European countries, especially Scandinavian regions, the cheap labor forces will help to reduce total costs and build competitive advantages. Beside, the high-end technology, integrated operations, rising position in Asia market and economic incentives will also provide added value. Picking a location in China to be the warehouse and distribution center for the Asia market could be an ideal plan. Making China a warehouse for exported Atlantic seafood and then re-export to the other Asia economies will be a time and cost saving option as well as a strategy to improve competitiveness against other rivals. For example, semi-manufactured salmon will be stored and delivered to the warehouses in China, and later will be re-distributed to Russia, Japan and other rivals. For example, semi-manufactured salmon will be stored and delivered to the warehouses in China, and later will be re-distributed to Russia, Japan and other Asian consuming markets after the further processing and packaging in China. The supply and distribution chain can be simply interpreted with the following figure:

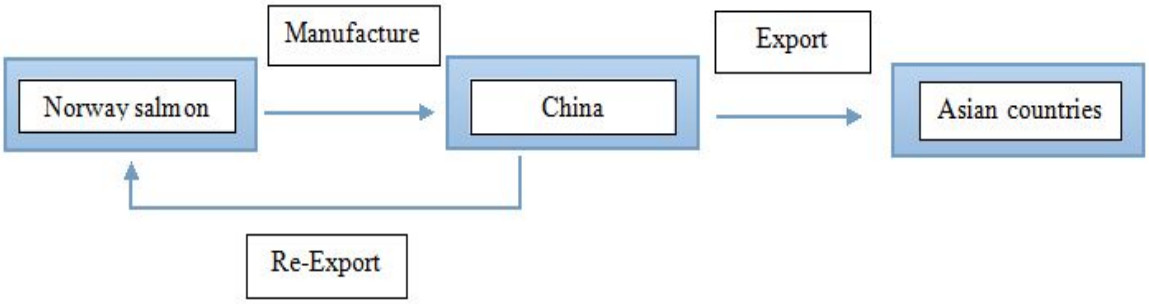


Figure 3.6 Supply chain with China being the distribution center

Transportation and lead time

Due to some political reasons, Norwegian salmon is normally unable to reach to China within the best preservation time which is assumed to be seven days. If Norwegian salmon will be delivered later than this period, the freshness and quality of the fish products will be influenced. Plus the issue reported earlier about the bacteria that carrying with salmon, most of Norwegian salmon are relabeled in Hong Kong before entering into Chinese market. The process is viewed to be too cumbersome and time-consuming while lead to deterioration in quality. And extra costs embedded in transportation and distribution will also be resulted in.

Marketing channels

As has been shown in the survey summary, a large portion of Chinese consumers mainly made their consumption on Atlantic salmon through channels such as restaurants, super markets and online retailing stores. But in general, the variety on marketing channels should be developed to promote more market sales of salmon consumption among Chinese customers. Broader market networks can also reduce the chances of counterfeit products being traded. And legal marketing channels for selling Norwegian salmon are called by many Chinese consumers who may become potential buying group in the future time.

As we know so far, the general import price of Norwegian salmon in the current Chinese market is about 40 NOK/ kg, while the selling price could reach to 280 NOK/kg sometimes, almost 7 times as the import price. The structure of the distribution and retailing network is assumed to be the major cause of this situation. The form of distribution channel that can be mostly found involves nearly all the partners including agents, wholesaler, retailer and customers. And within this form of channels, manufacture

intend to gain easier access to small retailers through middle agents, who in turn cooperate with wholesalers for large retail market segments and individual retail shops. Thus, hundreds of agents, wholesalers and retailers are gaining profits and lifting the selling price up to more than 200 NOK/ kg. It can be rarely seen a more easy, direct and integrated distribution channel in Chinese market for Norwegian seafood, but all through hybrid connections for most of time.

Thus, a more integrated and straightforward form of marketing channel should be developed and based on the latest Chinese economy, we believe that online retailing is an innovate and modern way for developing market popularity among Chinese consumers which allows fast and broad dissemination among public. The recent data of iResearch reveals that, the total transaction value of China's online shopping market has reached to 624.31 billion yuan in the second quarter of 2014, representing an increase of 46.1% than the former year. In terms of the market composition, 44.4% of which has been accounted by B2C with total value of 284.5 billion yuan. This number is said to be increased by 5.9% relative to the same period of 2013. The famous e-commerce platform in China, T-mall was said to occupy nearly 60% of the online B2C market share, and continue to lead the market. Another black horse in the market, JD.COM was reported to grow rapidly and now accounts for more than half of the market share.

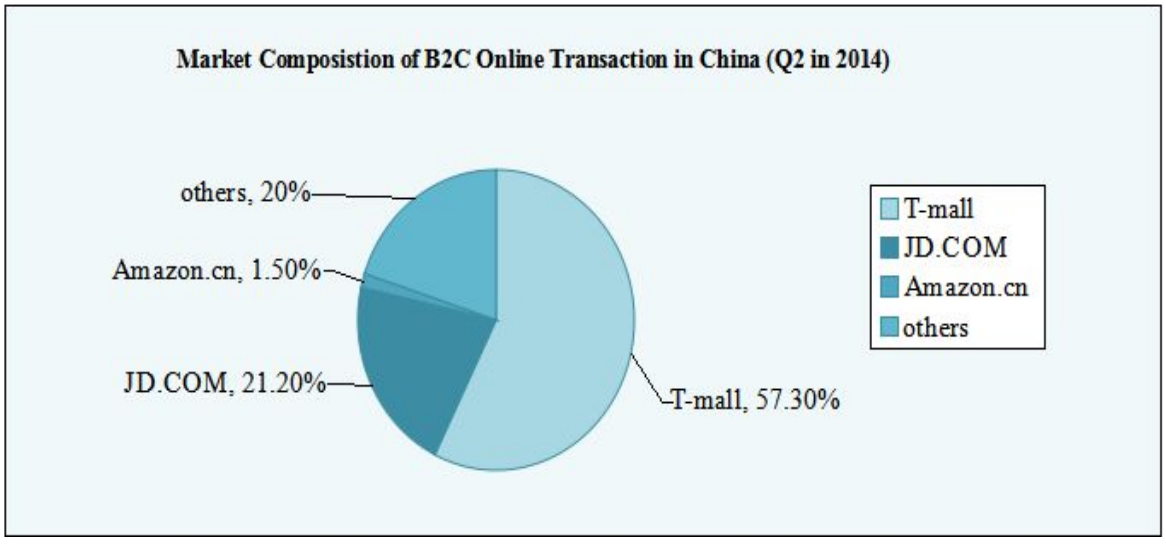


Figure 3.7 2014 Market Composition of B2C Online transaction in China (Q2)

Source: news.SINA.com.cn

In the light of the above information, web platforms for B2B or B2C such as Alibaba, Taobao, T-mall, JD.COM and so forth can be taken into consideration when deciding the online marketing channels for Norwegian seafood in China. This can be done with the help of Norwegian authorized organizations, for example, the Norwegian Seafood Export Council. An official online retailing stores on the leading Chinese web platforms (T-mall, Taobao, JD.com etc.) can be suggested in this case. So that a more straightforward retailing channel (shown in the figure below) can be used to push Norwegian seafood products directly to the end customers in China. This marketing methods enables more Chinese people to get better awareness of Norwegian seafood and helps to boost wide popularity among consumers. Transparent price information provided on the website for consumers to different original Atlantic marine foods from counterfeit products. By this way, Norwegian producers can take more active manipulation on the market price in Chinese market and meanwhile foster the process of the normalization of marketing networks by subtly reducing the middle agents and distributors. Rational prices can be defended and maximum profits will finally be obtained by Norwegian exporters.

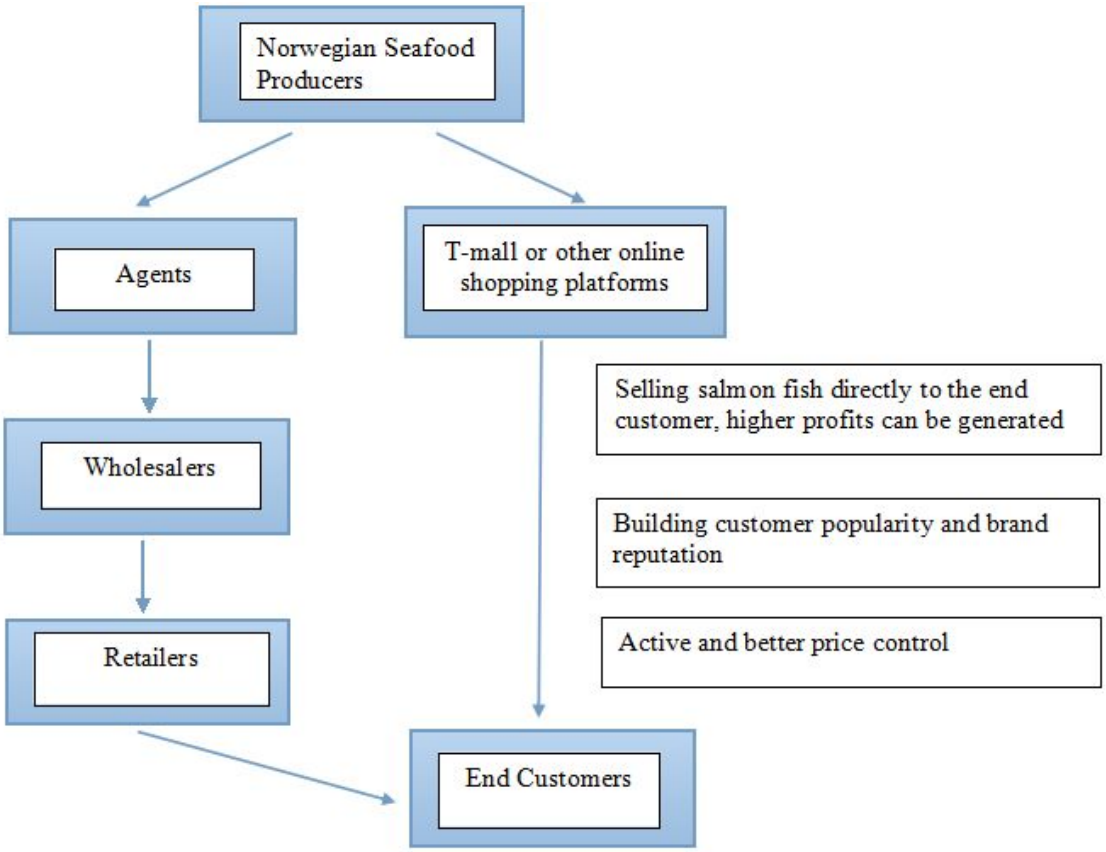


Figure 3.8 Online channels for marketing Norwegian salmon

Chapter Four: Literature

4.1 Summary

This whole paper has been discussed the current market consumption of Norwegian salmon in China and the solutions towards the owes, as well as outlook for the further market expansion from supply chain and logistic perspectives. Theoretical works related to supply chain and logistic concepts are mentioned in the beginning part of the paper followed by the content about the present industry profile of Norwegian salmon including: export information in the recent years, constrains and opportunities exists for its future growth. Afterwards, we have brought up the issues in today's Chinese market regarding the consumption of Atlantic salmon. In order to prove that these problems are really exist and will probably become the potential obstacles in the midway of Norwegian salmon's future market expansion, we had also conducted a simple survey for customer researches in the top three Chinese cities with highest average salary. The outcomes of the survey has been summarized as pie graphs with percentage composition shown in the figure. Although this simple survey has reflected some aspects of the customer preferences in the current Chinese society, advanced and research-oriented analysis is demanded for deeper studies of Chinese market as it is believed to be complex but profitable. In this paper, we aim to dissect the Chinese market from supply chain and logistic perspectives mainly focus on the present weaknesses on the marketing network structure for Norwegian salmon. Suggestion according to our understanding has been given including how to create an integrate and straightforward channel to avoid the speculations in the supply chain and take active strategies to better control on the price. As the important role supply chain plays in the cost-saving and profits generating for business firms, we believe that a good consciousness in supply chain management will help to gain added value and competitive advantages in today's business battlefield.

4.2 Discussion

4.2.1 Factors that may influence the export of Norwegian salmon to China

There exist some other economic factors that could affect Norwegian seafood exporting to China in addition to those elements from supply chain perspectives discussed in the previous sections. In terms of macroeconomic concept, world economy and global oil prices can largely impact currency exchange rate between Norwegian krone and Chinese yuan, which will have significant impact on the Norwegian export. The current situation of Chinese economy and public consumption can also decide the demand and buying power from Chinese market for Norwegian salmon. Factors that affect the sales of Norwegian salmon in Chinese are also discussed in this section including the distribution and marketing networks.

1) World economy and Norwegian currency

Global economy as a whole grows at a moderate rate but uneven prospects are found across different countries. According to the forecast released by WEO (World Economic Outlook) , the world economy is projected to grow by 3.5% in 2015. Weak prospects are projected in emerging markets while the growth in developed economies is improving. The outlook for some major emerging economies and oil-exporting countries are undesirable.

Global oil price is keeping fluctuated during recent 10 years from 2005 to 2014. Although the oil price has once reached to the peak at almost 150 dollars per barrel, it soon dropped to its lowest point just few months later at the end of 2008. Despite the recovery of economy, oil price has climbed gradually since the beginning of 2009 at a moderate rate and keep changing up and down between 60 to 120 dollars per barrel in the past five years. However, the price has reported to fall sharply again to 50.04 dollars per barrel on 5th January 2015 according to the latest news.

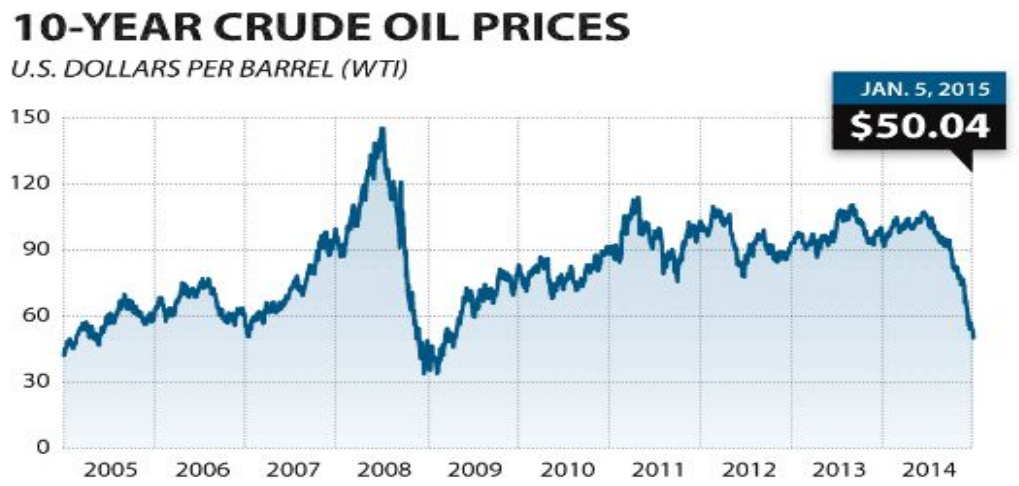


Figure 4.1 Crude oil prices in recent 10 years

Source :World Economic Outlook

With the sudden decrease of oil price, Norwegian krone lost its support against Chinese RMB as the exchange rate has dropped significantly since 2014 til now. The depreciated exchange rates will benefit the export of Norwegian salmon as the export costs gap between Norway and other seafood export countries will be narrowed, which largely in favor of Norwegian salmon's export.

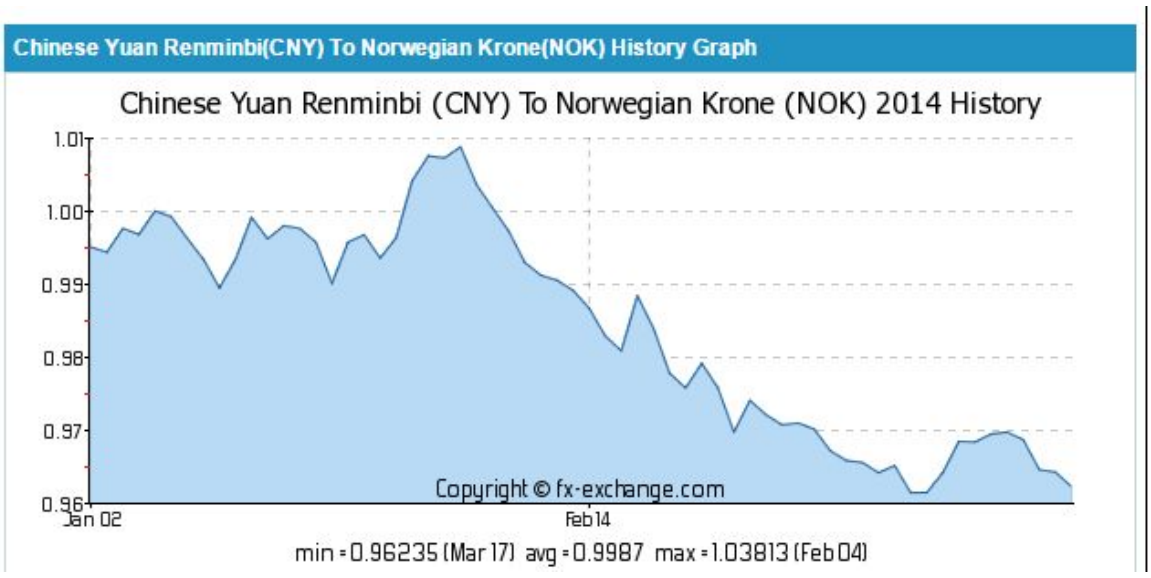


Figure 4.2 Yearly history of exchange rate between Chinese Yuan and Norwegian Krone in 2014

Source: fx-exchange.com

2) Chinese economy and consumption

Painful but still need to confess that China's GDP growth was reported to be only 7.4% in 2014 and was believed to be the lowest after 1990. The problem has not yet been addressed by Chinese government or the solutions that should be implemented. But prospects of China's economy could be brighter if the national consumption could become the primary source of growth instead of investments, said by some analysts. Despite the facts that the country's consumption has grown in a healthy way, about 10.9% increase in 2014, the proportion that contributed by households was said to below 40% of GDP (while investments account for 50% of GDP). Thus, many people believe that it will take some years for China to become a consumption-driven economy. But according to the estimation of IMF (the International Monetary Fund) and other pessimistic forecasts, the growth of Chinese economy will only be 6.8% this year.

The economy health in China decides the income level of people, and indirectly influence the public consumption. According to the survey outcomes mentioned in the previous chapter, Norwegian salmon is mostly regarded as high-end foods to be consumed in China. People with salary level of 5000 to 10000 Chinese yuan contribute to the major market share currently. Thus, the income situation in China is also important for us to consider when determine the target customer groups.The chart below displays the lately average wage per year in terms of the national population, which equals to 52388/12=4365RMB=623euro/month(before tax).

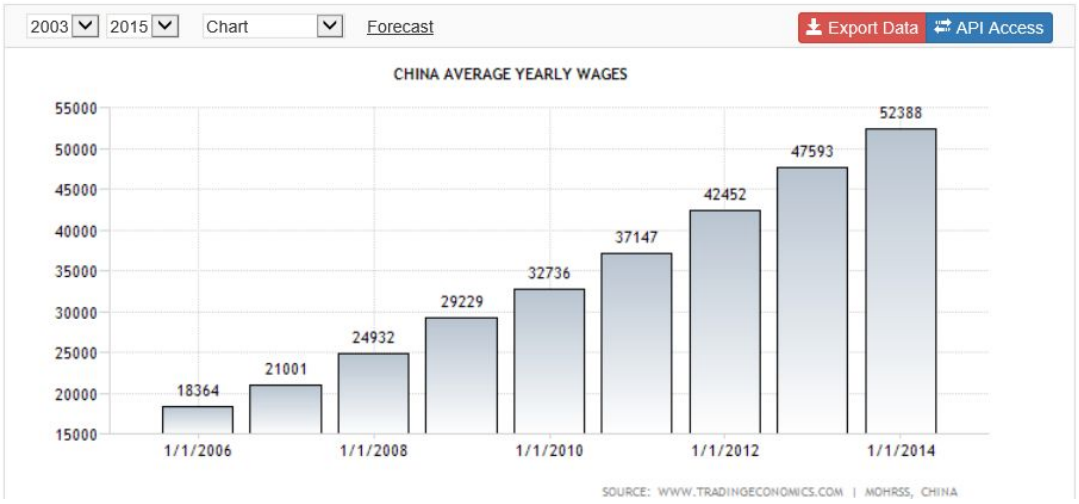


Figure 4.3 2006-2014China average yearly wages

Source: tradingeconomics.com

Based on the previous context, the top three cities with highest salary in China are listed as: Shanghai, Beijing and Shenzhen. Citizens of these areas are more likely to be the potential customer groups of Norwegian seafood. As far as we know, urban consumers in China tend to prefer healthy food even if with relative higher prices and they are more willing to try new products with innovative attributes. As a result, more intensive and deep promotions of Norwegian seafood should be penetrated within major Chinese cities.

4.2.2 Factors that affect sales of Norwegian salmon in China

1) Control on the price and networks of retailing in China

As far as we know, the general import price of Norwegian salmon in the current Chinese market is about 40 NOK/ kg, while the selling price could reach to 280 NOK/kg sometimes, almost 7 times as the import price. Sources of dealers gain abnormal profits through the transactions. However, this high price does not lead to expected market sales. According to the formula of Sales= Unit Price* Quantity, market demand will increase when price goes down, which can be presented as the following formula :

Sales = (Price-P)*(quantity +Q)

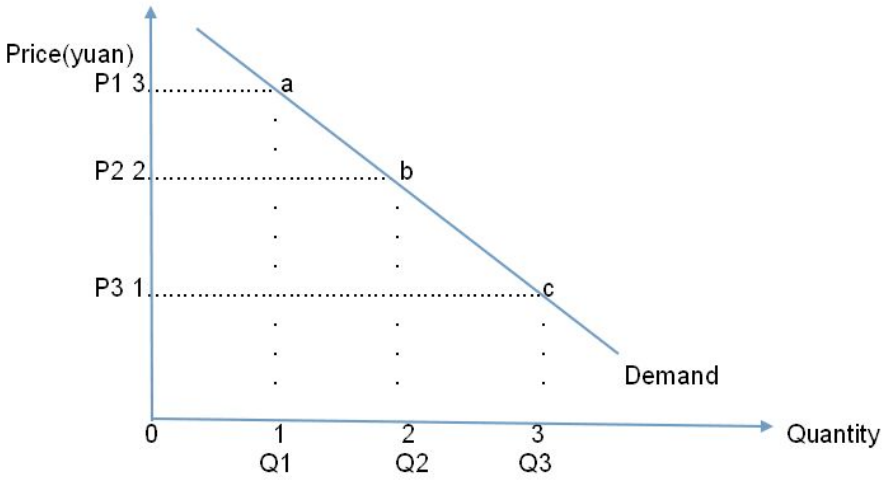


Figure 4.4 Demand curve: the impact of price change on the quantity and sales

Assume that the point A in the figure stands for the sales when unit price equals to P1 or 3 RMB and quantity is Q1 or 1, so the total sales can be calculated out to be A=P1*Q1=3*1=3 RMB. And point B represents the sales when a new set of price and quantity is P2 or 2 RMB and Q2 or 2 respectively. Thus, sales B=P2*Q2=2*2=4 RMB.

The same calculation for point C with P3 and Q3 to be 1 and 3 which result in sales C=P3*Q3=1*3=3RMB. Comparing these three sales points, we found that, the highest outcome is generated by the combination of P2 and Q2 where 4 RMB of total sales can be gained. What we wish to explain through the figure and calculation is that, establishing a suitable price level for Norwegian seafood is such critical things in deciding the market sales. A more active price strategy is urgently required to defend the price of Norwegian salmon selling in Chinese market instead of a market driven price which contains suspicions of opportunism and speculation. Extended customer research in Chinese market should also be conducted regarding the public demand and preference, price elasticity and satisfaction.

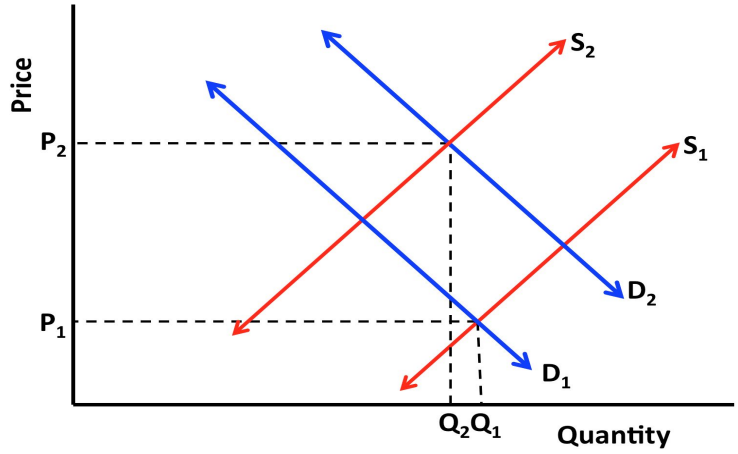


Figure 4.5 The impact of both changes in supply and demand on the price and quantity

But contrary voices can be found among Chinese dealers of Norwegian seafood who complain that, the major reason causes the Atlantic salmon being sold expensively than other salmon in the market is due to its limited supply volume. As what we discussed before, the production and export of salmon in Norway has to be legally in compliance with the governmental laws and policies which contributes to the partial reason of the fluctuated supply that exported to China each year. In other words, the Norwegian salmon that has been exported to Chinese market is believed to be far enough to satisfy the national market needs. Whenever the supply goes down while demand still grows at a relative stable rate as market is expanding with increased consumers wishing to buy the products, the intersection of supply and demand curve will change by moving up with a higher price. And the facts in China complements that overall Chinese consumers are price-sensitive and the finally resulted high price of Norwegian salmon may reduce the willingness of more people to purchase it. So the demand will drop in the end.

One thing is essential to be addressed in terms of controlling on the market price of Norwegian salmon and avoid the speculations in the process of delivering goods to the end customers relating to the effective formulation of integrated and systematic marketing networks. The current retailing channels in Chinese market for distributing and selling Norwegian salmon basically involve the major players in the chain containing agents, wholesalers, and retailers. And a single chain always composed by layers of agents. Most of time, seafood products are distributed and dealt through hybrid connections under unregulated operations which involve hundreds of dealers at the same time. Even some of those small dealers found it's hard to reach to the real sources of Norwegian salmon.

For individual customers, some major channels through which Atlantic seafood can be consumed include restaurants, super markets and online retailing stores as shown in our survey results. Restaurants turn out to be the most popular place to go where people can taste fresh seafood imported from North Europe. However, this desire can be realized only in countable restaurants and with impressive prices. The frequency that a normal households in China can make such consumption is definitely to be low. Thus, marketing through restaurants will largely limit the expansion of Norwegian seafood in Chinese market and could hardly be an optimized choice. Agents and wholesalers normally cooperate with super market chains to promote Atlantic seafood in China, where the prices of Norwegian salmon are still reported to be high in the eye of Chinese customers.

The online retailing is proposed to be an innovate and modern way for developing market popularity which allows fast and broad dissemination among public. Yet because of the commonly seen counterfeit products in China, the idea to market Norwegian seafood via Internet trade platforms seems to be controversial. Although it is undeniable that the tendency of online retailing in China has been strong for a while, the new way of making transaction will continue to be a major habit in Chinese people's daily life.

In general, the variety on marketing channels should be developed to promote the market sales of salmon consumption among Chinese customers. Broader market networks can reduce the chances of counterfeit products being traded. And legal marketing channels for selling Norwegian salmon are called by many Chinese consumers who will possibly become potential buying group in the future time.

2) Control on the quality and differentiate from those substitution products

The top descriptions about Norwegian salmon come up from Chinese consumers' minds may be freshness, rich nutrition, superior quality and impressive prices. Especially the selling prices which is reported to be times higher than actual import costs. The attractive profit margin result in a large amount of so-called Norwegian salmon appear in the market, including the United States trout, salmon, and so forth. Plenty of Chinese consumer are not able to distinguish these products with naked eyes, allowing the proliferation of counterfeit goods being traded which seriously damages the reputation and export volumes of Norwegian salmon.

Some analysts in China has proposed certain suggestions regarding this owes:

1. Special labels with authorized approval from Norwegian official organizations can be affixed on the products to differentiate from those counterfeit goods.
2. Business microcode can be issued for Chinese agents who wish to have a license of conducting businesses with Norwegian seafood, which should be authorized by the Norwegian organizations.
3. Intensive efforts on the market control should be noticed. Active manipulation can be taken in price control and right preservation. Legal forces will be needed in the particular cases.

Chapter Five: Appendix

5.1 List of Tables

5.2 List of Figures

Consumer survey

This survey is being conducted to investigate Chinese consumers' preference of Norwegian salmon. (Mainly from top three cities with highest average income level, including Beijing, Shanghai and Guangzhou). By answering this short survey you can help us to get better understanding of potential market buying power of Norwegian salmon in China.

1.Gender

Male_____ Female_____

2.Age

Below20_____20-30_____ 30-40_____40-50_____50-60_____above60_____

3.Income Level (Monthly, Chinese yuan)

Below 2000_____2000-5000_____5000-10000_____above10000_____

4.Have you ever heard or tasted original Norwegian salmon before?(Frozen/Fresh/Canned/Dry)

Yes_____ No_____

5.Do you think Norwegian salmon tastes good?

Yes_____ No_____

6.How often do you consume Norwegian salmon?

Never_____Few_____Often_____

Please describe briefly_____.

7.At what kinds of places or through which channels do you consume Norwegian salmon in China?

Restaurants_____Super markets_____Online shops_____others_____(Please specify)

8.Do you think the price of real Norwegian salmon available in Chinese market is suitable?

Yes_____No_____

9.What do you think would be the most proper price range of Norwegian salmon in Chinese market? (Price/kg, Chinese yuan)

Below 50_____50-100_____100-150_____150-200_____above 200_____

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