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BUS451: International Marketing Bachelor Project

Instructor: Bob Crockett

“This report has been completed as a part of the bachelor program in International Marketing, at Simon Fraser University / Norwegian School of Management BI. This does not imply that the methods which have been used, the generated results, or the conclusion drawn, have been verified by any of these institutions.”

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Amatec A/S
5/22/2009



Memorandum

To: Bob Crockett, Instructor BUS 451
From: Amatec Research Team
Date: Thursday, May 14, 2009
Subject: Amatec – Pacific West Coast Market Analysis –Final Report

Enclosed you will find the final report regarding the opportunity for Amatec to penetrate the North-American pacific west coast market. The report contains a detailed market analysis of the Canadian and American market and other relevant information regarding Amatec's potential expansion into this market. Additionally, the report contains several strategic options and recommendations on which options to pursue further and which areas that requires further investigation.

The report has gathered information through both primary and secondary research in order to create a more accurate solution to the challenges that Amatec might face when entering the mentioned market.

This report is meant as a guideline only and the authors take no responsibility for the potential outcomes by following these recommendations. If you have additional queries or requests please do not hesitate to contact us by phone or via e-mail.

Executive Summary

The following report has been done for Amatec AS in order to analyze and provide solutions to the challenges of entering the North-American Pacific West Coast market. Amatec is a Norwegian company which produces industrial sewing machines which join and mount fish nets. Due to the company's experience in the fish net industry, the main purpose of this report is to provide a market analysis and a strategic discussion regarding the fishing industry, including both the commercial fishing and aquaculture sectors. However, the report also looks at alternative markets such as the sports net industry, specifically the golf net industry, but this requires further research to create a more accurate picture of that particular industry.

The initial part of this report contains a detailed company profile and internal analysis, the research problem and research objectives. These objectives include which factors that is most relevant to the development of this report, and the methods used to obtain the most accurate information in order to properly identify opportunities and threats for Amatec. Furthermore, this report includes a strategic problem definition that in turn leads to both short term and long term goals in which are the basis for the following strategic discussion.

Research Methodology

This report uses primary and secondary research to thoroughly analyze the market. The primary research method used is exploratory research in form of interviews with industry

professionals, in person and by telephone. These interviews include key individuals such as Kevin Online, Doug Dickson, Doren Anderson and Jerry Corriveau and Geoff Senichenko.

Secondary research has also been conducted using literature, articles, and internet sources in order to gain overall knowledge as well as in-depth insight on the subject.

Findings

The primary and secondary research indicates that the commercial fishing industry in North-America is declining and that the aquaculture industry is increasing, which has led to a slight increase in the overall fishing industry. However, the aquaculture industry is facing a paradigm shift. Environmentalist views and new technologies in form of closed containments and land-based aquaculture threaten the netting industry. Despite this, the research indicates that this shift is still years away from actualization.

Due to the nature of the products and the advantages of face-to-face communication, combined with the company's limited resources, the strategic option of using an agent in North-America is not only considered as an entry strategy but is also recommended as a long term solution depending on market development in the future. It is further recommended that the agent is hired on a provision based salary and that the company undergoes a thorough screening process in order to hire the agent that is best suited for the challenge.

Based on the research, it was found that the market potential for Amatec in the North-American West Coast is estimated to approximately \$383 000 CAD. Based on market forecasts and cost estimation it is believed that if Amatec should choose to enter this market

they will most likely reach a profit of approximately \$38 500 CAD in their first year of operation.

Recommendations

Based on the research conducted the research team has been able to generate several strategic recommendations and options for Amatec.

- It is recommended that Amatec uses the overall strategic option of seeking international niches.
- In regards to an entry strategy into the Pacific West Coast it is recommended that Amatec hires an agent which should be based out of Vancouver, B.C. The research team concludes that producers of nets for the aquaculture industry are the primary market. This particular market has the greatest potential in B.C.
- The research team recommends contacting Sheryl Lee at Campbell River Netloft. She has a unique insight into both the market and Amatec's products and will be able to represent the company in a very professional and successful way. When that is said; it is recommended that the company conducts a proper screening process and not hiring the recommended agent blind. It is recommended that professional agencies are considered and used to increase the chances of a successful hire.
- Amatec has for several years participated at industry trade shows in various countries. It is recommended that they continue this in North-America. The most

important would be the “Pacific Marine Expo” in Seattle, which is the largest commercial marine tradeshow on the West Coast.

- Furthermore, it is recommended that Amatec upgrades their website. They should post instructional videos on their website. Also, the company should edit the English version of their webpage, especially improving grammar and spelling mistakes, in addition to perhaps updating the whole site in order to make the interface easier to navigate.
- It is also recommended that Amatec further investigates the opportunity for entering the North-American sports net market. This particular market shows a great potential in the research team’s initial investigation, however this requires a lot more insight in order to make a proper decision.
- Finally, Amatec is advised to closely monitor the situation of aquaculture in the Canadian market in regards to the use of newer technology such as closed containment and land-based farms. Even though the research indicates that this is years from actualization, it is a very big threat for Amatec and should be monitored accordingly.

Acknowledgments

This report has been written as a part of the authors' Bachelor Degree in International Marketing. The authors exchange program by the Norwegian School of Management BI requires that the report is written and submitted at Simon Fraser University. This does however not imply that the methods which have been used, the generated results, or the conclusion drawn, have been verified by any of these institutions. The report is written for Amatec AS, as a market analysis and research tool in regards to their proposed entry and expansion into this particular market.

The research team would like to acknowledge several key persons for their contribution and willingness to make this project a reality. Firstly, the team would like to give a special thanks to Mr. Bob Crockett and his help, expertise, insight, and overall guidance. The authors would further like to acknowledge the various individuals in the fishing and netting industry throughout the North-American west coast for sharing time and knowledge through several interviews. Also, the authors would like to thank Simon Fraser University and the Norwegian School of Management for their assistance in this process.

Additionally, the research team would like to acknowledge Jolly Ann Maulit, Ashley Cameron and Lisa Koss for their assistance in the project's editing process.

Lastly, the authors would like to thank Amatec AS for giving us the opportunity of working with this project and especially Lars Einar Riksheim for his assistance and enthusiasm throughout the development of this report.

Vancouver, Thursday May 14

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Terminology

In this paper we have used a number of terms in which we would like to explain more in detail in order for the audience to get a better overall understanding of the report.

Fishing Industry:

Includes both recreational, subsistence and commercial fishing, aquaculture, and the harvesting, processing, and marketing sectors

Fishery:

A unit determined by an authority that is engaged in harvesting fish. Typically, the unit is defined in terms of some or all of the following: people involved, species, area of water, method of fishing, class of boats and purpose of the activities.

Commercial Fishing Industry:

This term is defined for this report as all capture of wild fish on a commercial scale. In other words, it does not include aquaculture or recreational fishing.

Aquaculture:

The farming of aquatic organisms including fish, molluscs, crustaceans and aquatic plants with some sort of intervention in the rearing process to enhance production.

Fish Farming:

Farming of finfish species

Hatcheries:

A facility where fish eggs are hatched under artificial conditions. The fish are later on transferred to fish farms.

Recreational Fishing (sport fishing):

Harvesting fish for personal use, fun, and challenge (e.g. as opposed to profit or research)

Recreational fishing does not include commercial sale.

Agriculture:

The production of food and goods through farming and forestry.

Ex-vessel Value:

The amount paid to fishers for their raw catch. The value before processing

North Pacific Region

Refers to the state of Alaska

Pacific Region

Refers to the three states of California, Oregon and Washington

Pacific West Coast

Refers to the states of California, Washington and Alaska, and the province of British Columbia. The coastline facing the Pacific Ocean.

<http://www.fao.org/fi/glossary/default.asp>

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Analytical Stage

Introduction

Background for Research

Amatec AS is a Norwegian business to business company, operating in the engineering sector. The company is the market leader in the Scandinavian market, with an annual return of \$6.5 million CAD. Amatec AS produces and offers a wide range of industrial machines and equipment to the sewing industry, ranging from simple machines for handwork adapted to smaller industries, to bigger more complex machines suitable for the big players in the industry. Additionally, the company is aiming to create and maintain long-term relationships with its customer base, by offering service and training on their products post sales (Amatec, 2009).

This report however, only focuses on three flagship products Amatec provides in their product portfolio; Amarope AM302, Amanet AM402 and Amatracker TR1. These products can be defined as machines and equipment for joining nets and mounting of gill nets. The Amatracker TR1 is meant for companies that make fishing nets for fishermen. Those markets consist of small companies, individuals, as well as a few larger companies. The Amarope AM302 and the Amanet AM402 are meant for joining larger fishing nets, mostly for fish-farmers (Amatec, 2009).

Amatec has already established a customer base in 12 European countries, and is currently interested in exploring the possibility for a market expansion into the west coast of Canada and the United States of America. It is believed that this region offers a strong opportunity for growth because commercial fisheries play a vital role in Canada's economy, particularly for coastal regions. Commercial fishery operations employ approximately 100 000 people nationwide, and fish and seafood exports reached \$3.9 billion CAD in 2007 (Fisheries and Ocean Canada. *"Commercial Fisheries"*). Also, the aquaculture industry in British Columbia is the country's largest aquaculture producer. British Columbia is also the fourth largest producer of farmed salmon in the world after Norway, Chile and the U.K. (B.C. Salmon Farmers Association. *"About Salmon Farming"*).

In regards to the American market the landings by fishermen in 2006 had an ex-vessel value of \$4.1 billion US. Ex-vessel value is the amount paid to fishermen for their raw catch. In the same year this industry generated over \$9 billion in overall sales and \$3.5 billion in income, and supported over 100.000 jobs (U.S Department of Commerce, 2006).

Research problem

"To determine if there is an opportunity for Amatec to expand into the Pacific West Coast, using primary and secondary sources to ascertain potential demand and if the expected profits exceed the costs of entering this market."

Research objectives

The research objectives for our report are to obtain information about the following factors:

- The traditional fishing industry on the Pacific West Coast, both the US market and the Canadian market
- Aquaculture on the Pacific West Coast
- Commercial and recreational fishing on the Pacific West Coast
- Laws and regulations regarding both sectors
- Competitors in Canada and the U.S.
- Potential customers and demand for the products
- Local and national issues regarding the fishing industry
- Future of the fishing industry on the Pacific West Coast

Research limitations

In this report both primary and secondary research was conducted. The primary limitation regarding the secondary research is that some of the reports and statistics were published in previous years and may not be current. The primary research consisted primarily of both telephone interviews and face-to-face interviews. Limitations with interviews come primarily from interviewees giving biased information because of subjective opinions. During telephone interviews it was noticed that technical terms were difficult to explain without being able to demonstrate how the machines work, which might have led to misunderstandings. Also, it proved difficult to reach relevant people working in important positions like government employees.

Due to the lack of economic resources and long distances, research conducted in the U.S. was limited to secondary research and telephone interviews.

Amatec AS

History and Current Situation

Amatec started out as a “one man show” in 1984 with focus on industrial sewing machines primarily for the textile industry. After expanding into other areas like cutting, welding, engraving and fish net sewing, Amatec is now, after 25 years of service, one of the major suppliers of machines and equipment to the industrial sewing industry in Scandinavia. The company’s annual return is \$6.5 million CAD. The Headquarter is located in Sykkylven on the west coast of Norway with sales offices in Oslo, Bergen and Stavanger (Amatec, 2009).

Organization

With only 35 employees, Amatec has a flat organizational structure with strong relations between the different departments. In Sykkylven they have the following departments: administration (9 employees), sales (3 employees), spare stock (2 employees), purchasing (1 employee), and service (8 employees).

In Oslo they have 8 employees working in administration, sales and service departments.

And in Bergen/Stavanger they have a sales and service office with 4 employees (Løvold, 2009).

Internationalization

Amatec expanded internationally in 2003 and are currently operating with direct sales to 12 countries in addition to Norway, these are: China, India, Australia, Greece, Turkey, Spain, Canada, Scotland, Ireland, Finland, Faroe Islands and Iceland. Spain is currently the only country with its own agent. In each country they have anything from one customer with one machine to three or -four customers with four to six machines each (Riksheim, 2009).

Products and Service

As mentioned, Amatec is a supplier of industrial sewing, cutting and welding machines. In Norway they focus on the textile industry as well as the fishing industry, while internationally their customers are only fish farmers and commercial fishermen. For this market they offer three main machines: Amanet and Amarope are both intended for joining nets, mostly for the fish farming industry. Amatacker is for mounting fish nets and gill nets for small firms and individuals.

All of their machines can be custom made if the customer has specific needs or wants. In addition, they offer installation, training, repair and a wide selection of spare parts for their machines. Their most profitable customers are fish farmers, as the frequency of shifting out nets is higher in this sector. Their main income is from selling the machines, but a large portion also derives from sales of spare parts and service (Riksheim, 2009).

Customer Relations

Amatec aims for long term relationships with their customers. The fact that many of the customers they obtained 25 years ago are still loyal, is a testament to that commitment. Once they get a new customer, service staff work to build that relationship by offering training, support, maintenance and spare parts. However, because their machines have developed and become more durable, the number of sales of spare parts has decreased the past three years (Riksheim, 2009).

The durability of the machines varies from customer to customer. Depending on their usage, some machines can last for over 10 years, while others need to be replaced after 6-8 years. Usually, customers buy new machines when the service costs gets too high (Riksheim, Amatec).

Competitors

Their biggest competitor in Europe is an Italian company named BSM Buraschi (Riksheim, 2009). They specialize in the same market as Amatec and produce machines only for nets and ropes.

An indirect competitor is Union Special, an American machinery producer. Amatec is using a Union Special machine for the Amarope machine, but it has been substantially rebuilt. Union Special is sells only through their distributors around the world. Amatec is their only importer in Norway.

Amatec also has a competitor in France and Denmark. But their machines are not as strong and durable and are therefore incapable of sewing powerful or thick material (Amatec, 2009).

Market Backgrounds

In order to understand Amatec's potential markets, one must understand the sales process in which Amatec's operates in, from producer to the end customer, and which role Amatec plays in this process. As mentioned earlier, Amatec offers three different machines for mounting and joining of nets, suitable for the fishing industry. In this report the industry is divided into three areas: (1) the commercial fishing industry, (2) the aquaculture industry, and (3) the recreational sector. Amatec must focus on the commercial fisheries and the aquaculture industry, seeing their products are adapted to these markets. However, one must keep in mind that Amatec's customers are not the individual fish farmers or the fishermen per se, but rather corporations who are supplying and repairing such nets to the end customers, accordingly the fish farmers and the fishermen on the high seas.

On behalf of our client, we have chosen to investigate the Pacific west coast, which include four states Washington, Alaska, Oregon and California in the U.S., and the province of British Columbia in Canada. In order to get the whole picture of the market factors in this report, we have divided the market into the U.S. market and the Canadian market, with a description of the fish net industry at the end.

The US Market

The fishing industry in the U.S. is heavily regulated by state managers and federal governments. According to Michelle Grooms at Oregon Department of fish and wildlife, the fisheries are complex in the U.S. (Grooms, 2009).

“Some fisheries require state permits, others federal permits, some both, and others none. The commercial fishing rules are made through federal and state agencies. There is public input in the rule making processes.” (Grooms, 2009)

Regulatory Bodies

Individual states retain management authority over fishing activities within three nautical miles. Everything between three and 200 nautical miles are federal. Nationwide there are 47 fishery management plans that provide a framework for managing the harvest of 230 fish stocks, where 47 are currently categorized as overfished and 42 are categorized as subject to overfishing. There are several market based management tools available to fishery managers such as individual fishing quota programs, community development quotas, fishing cooperatives, and sector allocation programs. These programs assign harvest privileges to individuals or groups who can use them more beneficially. Currently there are 13 such programs nationwide in six different regions. License limitation programs, also known as limited entry programs, are additional management tools available to fishery managers. In these programs, the number of fishing vessels allowed to harvest a specific fish stock is

limited, rather than simply open to whoever might be interested in fishing. These programs are implemented in every region (U.S. Department of Commerce, 2006).

One important organization to keep in mind is the National Oceanic and Atmospheric Administration (NOAA), which has the power to push for new laws and regulations regarding the fishing industry. NOAA, under the U.S. Department of Commerce, is the leading federal agency responsible for protecting marine mammals and their habitat in U.S. waters (National Oceanic and Atmospheric Administration. *"Fisheries"*). NOAA works to forecast the status of fish stocks, to reduce wasteful fishing practices, and to ensure obedience with fisheries regulations. Additionally, NOAA promotes sustainable fisheries whilst balances competing public needs (National Oceanic and Atmospheric Administration. *"About National Marine Fisheries Service"*).

Commercial Fisheries

In 2006, landings by fishermen in the U.S. had an ex-vessel value of \$4.1 billion. Ex-vessel value is the amount paid to fishermen for their raw catch. The U.S. commercial fishing industry is defined here as the commercial harvest sector. Overall this industry generated over \$9 billion in sales and \$3.5 billion in income, and supported over 100.000 jobs in 2006. From 1997, this is a 3% decrease when adjusted for inflation (U.S. Department of Commerce, 2006).

Recreational Fishing

There were 13.6 million recreational anglers in 2006. Their expenditures contributed \$82 - billion in sales to the U.S. economy, supported over 500,000 jobs, and generated \$38.1 billion in value-added impacts. There were more recreational anglers in 2006 than in any other year from 1997-2006. According to an article in the magazine "New Scientist" (Jeff Hecht Vince, 2004), recreational fishing is taking a heavier toll on some threatened marine fish in U.S. waters from which commercial fishing is already restricted. Recreational fishing accounts for 59 per-cent of the reported catch of overfished species along the Pacific West Coast. Today, it is minimally regulated in U.S. waters, which is an important factor to consider with regards to the future of endangered fish stocks and the total fishing industry in the U.S. That being said, recreational fishing does not represent a potential target market for Amatec as they do not use big nets in their fishing practices.

North Pacific: Alaska

Federal fisheries in this region are managed by the North Pacific Fishery Management Council (NPFMC) and the National Marine Fisheries Service under one of five fishery management plans: (1) the Bering Sea/Aleutian Islands Groundfish, (2) the Gulf of Alaska Groundfish, (3) the Bering Sea/Aleutian Islands King and Tanner Crabs, (4) the Salmon Fisheries, and (5) the Scallop Fishery (U.S Department of Commerce, 2006).

The North Pacific Region has seven limited access privilege programs – more than in any other region. Currently, only one stock managed by the NPFMC is listed as overfished, the

blue king crab. No other stocks in this region are currently subject to endangerment (U.S. Department of Commerce, 2006).

The Alaska Department of Fish and Game issues licenses and controls area of 0-3 nautical miles offshore. Their mission is to protect and enhance Alaska's fishing activities, and to manage the resources in the best interest of their economy (Alaska Department of Fish and Game. "*ADF&G Mission Statement*"). 18 547 commercial licenses were issued in 2006 (State of Alaska Department of Fish and Game, 2009)

Commercial Fisheries in the North Pacific

In 2006, landings by fishermen in Alaska had an ex-vessel value of \$1.4 billion. Overall, the fishing industry in Alaska generated over \$930 million in sales, and supported almost 19 000 jobs (U.S. Department of Commerce, 2006).

In the 1940s and 1950s the salmon runs collapsed under federal management, and the outcome was that the state had to shut down most of the salmon fisheries to rebuild the runs. Thus, Alaska has discovered that sustainability is crucial for the industry to survive, when the scientists say it's time to cut a quota, they realize that is the right thing to do. Alaska has good stock assessment programs coupled with a good scientific advice to keep the industry sustainable (Butler, 2007).

According to Benton, Alaska produces over half of the nation's fish, but Benton would like to see some more progress in the other states too. The other states need a plan for adapting to climate change in the Arctic Ocean, which is why the Marine Conservation Alliance began the process of closing it entirely to fishing until a plan was developed. Alaska has basically

rewritten numerous international laws which affect the North Pacific. In doing so, they are showing that while there are challenges in the fishing industry, they can be overcome with adequate regulation, (Rhett A. Butler, 2007).

Pacific Region: California, Oregon, Washington

Federal fisheries in this region are managed by the Pacific Fishery Management Council (PFMC) and the National Marine Fisheries Service (NMFS) under four fishery plans: (1) the Coastal Pelagic Species, (2) the Pacific Coast Ground fish, (3) the Highly Migratory Species, and (4) the Pacific Coast Salmon (U.S. Department of Commerce, 2006).

The Washington Department of Fish and Wildlife is responsible for the state's fish and wild resources. The department operates under a dual mandate from the Washington legislature to protect and enhance fish and wildlife and their habitat, as well as creating sustainable recreational and commercial opportunities (Washington Department of Fish & Wildlife. *"About WDFD"*). Additionally, the Oregon Department of Fish and Wildlife has the same responsibilities to protect and enhance Oregon's wildlife so present and future generations can use and enjoy the resources (Oregon Department of Fish & Wildlife. *"Mission Statement"*). Further, the California Department of Fish and Game works under the same principles as Oregon and Washington (Department of Fish and Game. *"Marine; New additions to this site"*). The commonality amongst these departments lies in the fact that they issue and regulate licenses in state waters 0-3 nautical miles from the shore.

Commercial Fisheries in the Pacific

In 2006, the Pacific region's commercial fishing industry had an ex-vessel value of \$215 million in Washington, \$130 million in California and \$107 million in Oregon.

Overall, commercial harvesters generated \$248 million in sales in Washington, \$150 million in California and \$120 million in Oregon. Regarding commercial fishing licenses, California issued 5321 licenses (California Department of Fish and Game, 2009), Washington 3078 licenses, (Stedman, 2009), and Oregon 1713 licenses in 2008, which is a decrease from the previous years (Grooms, 2009). This decrease is reflected under the Endangered Species Act, as several species of Pacific Salmon are listed as threatened or endangered. The incidental harvest of these species is a concern. Particularly salmon bycatch (incidental harvest of a non-target species) is a concern for the sardine fisheries off of Oregon and Washington (U.S. Department of Commerce, 2006).

The 2008 Salmon Crisis on the Pacific West Coast

It is important to understand that the numbers from 2006 do not give a correct up-to-date picture of the current fishing industry. First of all, there was no commercial salmon fishing permitted in California in 2008 and therefore the West Coast total regarding salmon comprises only Oregon and Washington. In 2008, the ex vessel value of salmon in Oregon, Washington and California decreased with 90 percent in comparison to 2007, which led the salmon prices to increase. For instance, the 2008 average Chinook price was the highest recorded in more than 25 years when adjusted for inflation. The amount of salmon available for harvest in the Pacific Fishery Management Council areas thus depends on harvests in Canada and Alaska. The Pacific Salmon Treaty allocates the harvest between the three states

in the Pacific U.S., Alaska and Canada. This treaty was implemented because many of the salmon stocks under the jurisdiction of the PFMC are affected by management actions taken in Canadian and Alaskan waters (Pacific Fishery Management Council, 2009)

NOAA's Fisheries Service announced on September 17, 2008, that \$100 million of disaster-relief aid will be made available to West Coast salmon fishermen. The Salmon crisis on the West Coast left thousands of fishermen and dependent businesses struggling to make ends meet. On November 25, 2008, NOAA announced it is making an additional \$70 million in disaster-relief aid, completing the financial-assistance package announced in September to include \$170 million (National Oceanic and Atmospheric Administration, 2008).

Aquaculture in the U.S

In the U.S., there is a regulatory barrier to fish farming. Currently, there is no way to obtain a permit for aquaculture in federal waters under existing U.S. laws and regulations. In response to this, NOAA and the department of commerce transmitted to congress "The National Offshore Aquaculture Act of 2007" to address this regulatory gap.

"The Act would provide the Secretary of Commerce the necessary authority to establish a regulatory framework for aquaculture in U.S. federal waters and authorize research for all types of marine aquaculture" (NOAA Aquaculture Program).

However, 2/3 of the aquaculture in the U.S. is molluscan shellfish culture, followed by salmon at 25 % and shrimp at 10 % (NOAA Aquaculture Program). Furthermore, open net

pens are not very common in the U.S., as fish farming in the U.S. is mostly comprised of hatcheries and farming in ponds and lakes.

“Recent advances in offshore aquaculture technology have resulted in several commercial finfish and shellfish operations in more exposed, open-ocean locations in state waters in Hawaii, New Hampshire, and Puerto Rico (NOAA Aquaculture Program).”

In other words, open net pen fish farming in the ocean has yet to take off, as this is a relatively new concept on the U.S. west coast. This explains why there is currently no proper regulatory framework to manage fish farming on a large scale in the U.S.

Aquaculture in California

According to the California Department of Fish and Game, aquaculture in California is limited to the production of shellfish such as oysters, mussels, clams, and abalone. No marine finfish is being produced on a commercial scale. A few land-based commercial aquaculture facilities are currently in the research and development phase. The National Offshore Aquaculture Act is delayed, and there is currently no comprehensive federal framework for regulating offshore aquaculture (Heisdorf, 2009).

Aquaculture in Oregon

Oregon has limited marine fish production; the aquaculture industry is mainly made up of privately owned hatcheries. Currently there are 31 licensed hatcheries in Oregon. This number has remained steady for the past 5 years, and it is not expected to increase in the future. Additionally, there are 32 hatcheries owned and controlled by the state of Oregon for

release of salmon and trout into Oregon waters (Chilton, 2009). However, hatcheries are not important to Amatec's business, as they do not use nettings in their production facilities. Moreover, aquaculture in Oregon will only grow if the Oregon Department of Agriculture supports the industry. Currently, there is no professional mandate at the Oregon Department of Agriculture to assist with aquaculture in Oregon (Bridges, 2009).

Aquaculture in Washington

Fish farming is still a small industry in Washington compared to B.C. However, Washington plays a leading role in filling the demand for salmon in the U.S. There is only one salmon farming company in Washington called "American Gold Seafoods". It is the only American owned fish farm and operates with one fish farm with 8 marine net pens, in 4 distinct areas near Puget Sound. According to Kevin Bright at American Gold Seafoods, the people who own property near the shore are opposed to having fish farms close to their properties. Nonetheless, there is research developed on underwater systems to hide the farms from public view (Bright, 2009). In addition, it has a 500 acre hatchery. The Washington Fish Growers association has been promoting the potential for aquaculture growth in the region. However, concern for the environment and the wild stocks has played a critical role in limiting the expansion of the industry (Paulson, 2007).

Aquaculture in Alaska

According to Jerry Corriveau, Alaska has banned fish farming due to pressure from environmental organizations. (Corriveau, 2009). Since the late 1980s Alaska has had a ban

on fish farming of any kind. There had been a fear in Alaska that fish farming would negatively impact Alaska's reputation as the place to get wild quality seafood (Welch, 2007). However, this prohibition of fish farming only applies to state waters 0-3 miles offshore. (Alaska Marine Conservation Council. "*Offshore Aquaculture: FAQs*"). The Alaska Marine Conservation Council is an environmental organization that is opposed to fish farming. They are afraid that the U.S. government is going to push a legislation that allows industrial scale fish farming operations in federal waters from 3-200 miles offshore. (Alaska Marine Conservation Council. "*Oppose Finfish farming*"). Sarah Palin stated in 2007, that Alaskans will not support offshore aquaculture until adequate measures are in place which ensures the protection of Alaska's wild stocks (Alaska Marine Conservation Council. "*Offshore Aquaculture: FAQs*").

Future of aquaculture in the U.S

In June 2005, the Marine Fisheries Advisory Committee requested that NOAA organize a 10-year plan to support the future development of marine aquaculture in the U.S. The four distinct goals in this plan are: (1) A comprehensive regulatory program for marine aquaculture, (2) Development of commercial marine aquaculture replenishment of wild stocks, (3) Public understanding of marine aquaculture, and (4) Increased collaboration and cooperation with international partners (Gutierrez et al., 2007).

One main reason for supporting sustainable aquaculture according to the 10-year plan is to rebuild the wild stocks by increasing seafood production and to maintain coastal communities. Since 1998, NOAA has funded 15 million American dollars in research to boost

the production of commercially and recreationally valuable marine shellfish and fin fish in the U.S. However, NOAA has detected several challenges in the pursuit of increasing commercial seafood production in the U.S. including a complicated, inefficient and uncertain federal regulatory process to permit marine aquaculture facilities, the need for additional research on the environment due to fish farming, and lack of access to coastal sites for marine aquaculture (Gutierrez et al., 2007).

“One of the reasons that there is not much ocean fish farming on the U.S. west coast is government regulations, mainly environmental regulations. Additionally, the U.S. west coast (with the exception of Alaska) does not offer many sheltered locations where net pen farming could take place. Both British Columbia and Norway have many coastal islands which can protect net pen operations from severe storms (Chilton, 2009).”

To sum up, the most significant market for Amatec to consider is commercial fishing in Alaska as they distribute and harvest the largest volume of fish. Moreover, aquaculture is almost nonexistent on the U.S. Pacific West Coast due to a regulatory environment that makes it extremely difficult to obtain permits for fish farming in the ocean. In other words the U.S. Pacific market does not represent a significant opportunity for Amatec at this time

The Canadian Market

General prospect of the fishing industry

Having the world's longest coast line, aquaculture and commercial fishing are natural choices for Canada. Canada is the 4th largest producer of farmed salmon in the world, and the 5th largest seafood exporter worldwide (Fisheries and Ocean Canada, 2005). However, Canada's fishing industry is controversial due to its many stakeholders and conflicting viewpoints, and these different viewpoints will determine the outcome of the future of Canada's fishing industry.

There are many players in this industry that one must take into account: aquaculture practitioners, commercial fishermen, recreational fishers, environmental groups, the First Nations, the public and the government. In the following sections, these issues will be outlined, and the stakeholders' impact of Amatec's opportunity for a successful market expansion into the Pacific west coast of Canada will be examined.

Aquaculture in B.C.

Aquaculture is the farming of freshwater and saltwater organisms including mollusks, crustaceans and aquatic plants (Food and Agriculture organization of the United Nations).

Canada is the 4th largest producer of Atlantic farmed fish in the world after Norway, Chile and the U.K., (Fisheries and Ocean Canada. "*Finfish*) and ranked 3rd in farmed Pacific salmon.

In 2006 the Canadian aquaculture production was dominated by four main categories,

sorted by volume: salmon at 66.7%, mussels at 15.8%, oysters at 8.7%, and trout at 3.4%. If Canada takes advantage of their long coast-line, the large freshwater system and tidal range, Canadian aquaculture could reach the potential of 577 000 tons by 2010-2015, generating a value of \$2.8 billion CAD (Canadian Aquaculture Industry Alliance. *“Opportunity for expansion – Global Need for Aquaculture”*).

Current outlook in B.C

Aquaculture is important for B.C.’s economy. In 2007, 80 000 tons of farmed salmon was harvested, which consist of an overall value of \$370 million CAD. Further, the aquaculture sector is generating 3500 direct and indirect job positions, in which 90 % are in coastal communities. In the graph shown on Appendix 1, one can get an estimate of the amount and type of fish produced in B.C. in 2007 (Fisheries and Aquaculture Licensing and Compliance Branch Ministry of Agriculture and Lands, 2007).

According to Statistic Canada, aquaculture has boosted B.C.’s economy as it has grown rapidly from 1984 to 2005, see appendix 2. In 2005, Aquaculture was the largest industry in the fishing sector, whilst sport fishing was the second largest, followed by fish processing and the commercial fishery looking at appendix 3 (B.C. Stats, 2007).

Furthermore, 85 % of aquaculture is exported, of which the largest export market is the U.S. British Columbia and New Brunswick are the main producers of Canadian farmed salmon; in 2005 B.C accounted for 59 % of the production, whilst New Brunswick accounted for 36 % (Canadian Aquaculture Industry Alliance. *“Production and Markets – Canadian Aquaculture Species*).

According to Ministry of Agriculture and Lands, there were 82 active operational sites inspected in 2007, and the rest of the sites are fallow sites. Looking at appendix 4, one can get an impression of where the farms are located on the map. Furthermore, “fallow” sites are those aquaculture farms that are inactive, allowing the seabed to recover from any organic input prior to stocking the next production cycle (Fisheries and Aquaculture Licensing and Compliance Branch Ministry of Agriculture and Lands, 2007).

Future Outlook

Salmon farming is what most people associate with fish farming, but there are a number of species that are now making an entry in Canada. Firstly, fish farming of sable fish is common in B.C., because sable fish is of a higher value than salmon (Corriveau, 2009). British Columbia has the world’s only commercial sable fish farm. The industry volume of sable fish farming is currently 500 tons a year, and it has the potential to be valued at \$200 million-CAD in 2020 (Canadian Aquaculture Industry Alliance. *“What’s New”*).

Secondly, it is predicted that Arctic Char will account for \$35 million CAD, Atlantic Halibut for \$100 million CAD, and Atlantic Cod for \$545 million CAD by 2020. Although, these species are mainly harvested on the east coast, (which is not our market), but it could be a valuable forecaster of further expansion for Amatec, as the demand for fish nets might increase due to an increase in new aquaculture species (Canadian Aquaculture Industry Alliance. *“What’s New –Job Posting”*).

The food and Agriculture Organization (FAO) of the United Nations states the world’s population and the growing wealth in the world, will increase the demand for fish and

seafood by 2030 (Fisheries and Ocean Canada. *"Myths and Realities about Salmon Farming"*). Even though the process of establishing new fish farms has been slow in B.C., Kevin Onclin at Wavemaster Ltd believes that people are starting to understand the importance of fish farms and predicts that in 5- 10 years, the aquaculture industry will grow (Onclin, 2009). Jerry Corriveau, working for Department of Fisheries and Ocean, states that he is optimistic with regards to aquaculture in B.C. (Interview, Jerry). In addition, the Government of Canada has announced a \$70 million investment over 5 years in its budget, which will go towards creating a successful and sustainable aquaculture industry across Canada (Fisheries and Ocean Canada. *"Sustainable Aquaculture Development"*). Lastly, according to Living Oceans Society, the government and the aquaculture industry would like to double the production of farmed fish within 10 years from now (Living Oceans. *"Salmon Farming"*).

Issues and Trends

Aquaculture has met a lot of resistance in B.C., especially through claims from environmental organizations, natives and the general public. However, The Pacific Salmon Forum concluded after four years of research, that farmed and wild salmon can coexist in the province of British Columbia. Further, the Canadian Aquaculture Alliance comments on a possible future trend in B.C., land based aquaculture; (Canadian Aquaculture Industry Alliance. *"What's New –Job Posting"*).

"It's difficult to predict whether a combined water and lands ministry would better protect wild salmon, although such a restructuring could lead to a more holistic approach to

protecting BC's marine environment (Canadian Aquaculture Industry Alliance. "What's New – Job Posting").

Another approach is the so called Integrated Multitrophic Aquaculture, where you grow finfish, shellfish and sea plant together. According to Jerry Corriveau from DFO, this type of aquaculture will remove the waste that one species creates, because the next species will feed off that waste. He believes this creates a more holistic approach to fish farming, but it takes time to develop (Corriveau, 2009).

First Nations

There are 93 First Nations in B.C., some of which are opposed to fish farming and the commercial fishing industry, whereas others are actively involved in and support the industry. It is not all black and white when it comes to First Nations and the fishing industry (The Tyee, 2009).

In 1990, the Supreme Court decided that the aboriginals' rights to fish for food as well for social and ceremonial purposes have priority over all other use of the fishery. In addition, Fisheries and Oceans Canada created "the Aboriginal Cooperative Management Program" to test different approaches to Aboriginal fisheries, which later led to the launch of "The Aboriginal Fisheries Strategy" in 1992 (Fisheries and Ocean Canada. "Aboriginal Fisheries Strategy"). In other words, the government is assisting the First Nations in managing fisheries in B.C.

However, there are some controversies around aquaculture and the First Nations in B.C. As of February 2009, a Northern Vancouver Island First Nation elder named Bob Chamberlin is

preparing a class-action lawsuit against the government, claiming that salmon farms are harming the wild stocks. Furthermore, he claims that aquaculture is producing waste and spreading diseases and sea lice (CTV British Columbia, 2009).

Bob Chamberlin has made headlines in the Norwegian media, for accusing Pan Fish for destroying the livelihoods of native villages in B.C., and Marine Harvest for operating with double standards. Chamberlin believes that farmed salmon is cancer causing, pollutes huge areas of the ocean, and creates shortages in villages (Grydeland, 2009).

However, some First Nations do support aquaculture. Fred Glendale, a Councilor and Resource Manager with the Da'naxda/Awaetlala tribe, has been watching the development of aquaculture, and believes that it provides stability, hope and employment for Aboriginals. Their main interest is to work with salmon farmers and Marine Harvest Canada to develop shellfish aquaculture. Moreover, he alleges that fish production is more environmentally efficient than beef, pork or chicken production (Marine Harvest, 2009).

According to Kevin Online at Wavemaster there are agreements between fish farmers and First Nation groups, but not many First Nations are running their own fish farms. However, as mentioned previously, some do support fish farming, whilst others hold on to their traditions of commercial fishing. This is an important factor to consider given his claim that the First Nations have the power to decrease aquaculture.

“They have held up lots of applications over the years. They can make it extremely difficult because part of the process when you apply to get a new site, you have to basically work out some kind of agreement with the First Nations in that area (Online, 2009).”

Gary George, a First Nation Student Life Coordinator at SFU and former fisherman, further supports the fact that there are mixed views regarding the First Nations and commercial fishing, as in the case with aquaculture. Most Aboriginals fish in the river with smaller boats, whilst commercial fishermen fish in the ocean. However, due to the declining fisheries, he believes that aquaculture is the way of the future (George, 2009). The declining fish runs could have a major impact on First Nations communities as the low return on salmon will have an impact on access to good foods (The Tyee, 2009).

The Commercial Fisheries in BC

The commercial fishing industry started in 1870, when the first cannery opened. Later, more canneries opened and in the 20th century fishing was an important food source as canned salmon from British Columbia was sold around the world. However, in the late 20th century Canada’s federal government imposed regulatory changes to the commercial fishing industry due to concerns regarding salmon survival and changes of the economics of the century old fisheries. This led to reduction in the fleet and in the number of fishing companies. (City of Richmond. *“Fishing Industry in British Columbia”*).

The Pacific Ocean includes over 27 000 km of coast along British Columbia, and the value of the commercial fishery in B.C. was \$230 million CAD, including the, pelagic, groundfish, and shellfish species (Fisheries and Ocean Canada. *“Fisheries in the Pacific Region”*). I 2006, 6398 commercial licenses were issued in B.C. (Fisheries and Ocean Canada, 2006. *“Commercial Licence status report–Pacific Region”*). According to Harviw Eng at DFO, access to commercial fishing licenses is declining every year (Eng, 2009).

The United Nations Food and Agriculture Organization (FAO) states that the wild fisheries cannot supply the world with the growing demand for fish that is to come. Further, approximately 75% of the world’s fishing grounds are fully exploited (Ecoplant International, inc., 2008). As is the case in Canada, where some stocks have declined to a level where they can no longer be fished, overall catches have declined significantly. Altogether, 140 stock extinctions have occurred, whilst many other stocks are at risk (Tank, 2004).

Due to the reduction of fish stocks, the government has been forced to intervene by adopting restrictive measures to ensure that future generations might still be in a position to consume sea products. License buy-back and quota programs have been instituted and this has decreased the total number of fishermen as well as the number of fish caught. The smaller fishing operations are the most affected (in favor of larger operations) and since the beginning of the 1990s, there has been a restructuring of the workforce in the fishing industry (Fisheries and Ocean Canada. *“Escapement updates”*).

Fraser River

Although, the Fraser River is one of the most productive Pacific salmon rivers in the world, overall trends are not positive, and climate change is likely to make things worse. In other words, the Fraser River is facing a considerable change and urgent action is needed (Fisheries and Ocean Canada. *“Escapement updates”*).

Apparently, there is talk about closing the runs completely for all commercial, recreational and aboriginal fisheries due to the declining salmon population (The Tyee, 2009).

Additionally, appendix 5 shows that commercial landings have decreased significantly in current years (Living Oceans. *“What is caught in Canada’s Pacific Waters”*).

Kris Nakashima at Pacific Net & Twine Ltd provided us with valuable information about the commercial fishing industry in B.C. When asked about the profitability of the fishnet industry, he answered in the following way:

“As a distributor, if you were just to concentrate on fishing alone, it is not a profitable industry. It would probably go under pretty quick. It has been a declining industry for the last ten to fifteen years (Nakashima, 2009).”

If things don’t change and help from the government is lacking, he believes the situations is going to get worse. The government has restricted the fisheries to the point where in the last 3 years there have been no opening Sockeye Salmon fishing in the Fraser River, which used to be one of the biggest runs in the world (Nakashima, 2009).

Additionally, Miro Cening, a journalist for the Vancouver Sun, has covered the fishing industry for years in his articles. He states that the reasons for the disappearing fishes are due to development of infrastructure, overfishing, First Nations, and climate change to some degree. As one goes further north, more fish will be found; likewise the further south you go, the less fish is available. In California a national emergency was called last year because there were so few fish left. If you move from the Fraser River and upwards to Alaska, it is definitely healthier with regards to the fish populations (Cening, 2009).

The Government and Regulatory Bodies

Commercial fisheries

The Fisheries Act is a federal legislation that deals with the management of Canada's fisheries resources and the conservation and protection of fish and fish habitat. This act assigns the Department of Fisheries and Oceans Canada (DFO) the responsibility of conserving and protecting fish and fish habitat, and applies to the whole of Canada, including private property in every province and territory (Fisheries and Ocean Canada. *"Commercial Fisheries"*). In certain provinces, the administration of federal fisheries laws has, by agreement, been delegated to the provincial government. The management of salmon fisheries in B.C., in both tidal and freshwater, is the responsibility DFO. According to Miro Cening, the federal government has jurisdiction over all coastal waters and the provinces have almost no control over local fishing or the regulation of fish farms (Cening, 2009).

Fishing regulations deal primarily with depleting stocks on both coasts and the requirement for the government to ensure resource conservation without forgetting economic and social development priorities. The federal government's present priority is the preservation of fish stocks by restraining the industry on both coasts and by limiting the number of active fishermen and boats. This will bring about an overall decline in employment in this sector, even if the harvesting of new resources leads to an increase in sales over the next few years (Fisheries and Ocean Canada. *"Escapement updates"*).

In B.C., regulations take into account the conflicts between the Canadian and American governments over salmon fishing rights and the need to reconcile the interests of First Nation fishermen, commercial fishermen and recreational fishermen. One aspect of government regulations which will profoundly affect those who remain in the fishing industry is the imposition of a code of conduct for responsible fishing. On both coasts, it will mean comprehensive recycling programs, the purchase of new equipment and the application of new technologies (Fisheries and Ocean Canada. *"Escapement updates"*).

Aquaculture

The salmon farms in B.C. are the most highly regulated and closely monitored aquaculture operations in the world.

"Farms have to comply with 52 separate federal and provincial statues, regulations, policies and guidelines, as well as municipal and regional district regulations. " (B.C. Salmon Farmers Association, 2009)

Fisheries and Oceans Canada along with other federal agencies, including Environment Canada, the Canadian Food Inspection Agency, the Canadian Environmental Assessment Agency, and Health Canada; they rigorously regulate both the location and the day-to-day operations of all Canadian aquaculture facilities. All suggested aquaculture developments are subject to a thorough environmental review, in addition to the Canadian Environmental Assessment Act (CEAA), to guarantee that the development will not negatively impact ocean habitat. (Canadian Aquaculture Industry Alliance. *“Safe Guarding the Environment - Rigorous Government Regulations*).

Currently there is a court case that might push the jurisdiction from the province back to the federal government. The federal government will have a slower but deeper analysis of the environmental consequences, due to lower political stakes. (Cernetig, 2009)

The Fisheries Act provides the authority for the Ministry of Agriculture and Land (MAL) to license aquaculture operations and to regulate on-site farming activities. MAL is the lead agency for aquaculture and has responsibility for overall compliance in the industry. Ministry of Environment (MOE) is responsible for monitoring obedience with environmental requirements intended to protect the area around fish farms, in addition to being the lead enforcement agency (Fisheries and Aquaculture Licensing and Compliance Branch Ministry of Agriculture and Lands, 2007).

The Public

The view of the public can predict the future of the fishing industry, so long as the government listens to the public. Additionally, as Jerry Corriveau stated, companies must have a social license in order to be able to coexist in society (Corriveau, 2009);

“You have to have a social license, in other words, an acceptance by the public, which only comes with time and education” (Corriveau, 2009).

There seems to be mixed views on the fishing industry in B.C. In 2006, the DFO conducted a study on public opinion regarding overfishing and international fisheries and oceans governance. Firstly, awareness of actions on overfishing is lowest in B.C. However, 83% of British Columbians, especially Vancouverites are more likely to believe that it is important to take necessary steps to stop overfishing/illegal fishing. Secondly, British Columbians, representing 73% of the survey, are more likely than other Canadians to place a greater importance on the health of fish stocks than on the health of the fishing industry. Lastly, the strongest concern regarding the future of global fish stocks is found in British Columbia (56%) (Fisheries and Ocean Canada. (2006). Environics Research Group – Public Opinion Survey).

Another study conducted in 2006, showed that people on the west coast were not as positive toward fish farming as people on the east coast were. In fact, west coast residents were the least likely (47 %) to support the practice of fish farming (Fisheries and Ocean Canada, 2006. Summary Report).

However, these public views are subject to change, as these studies were conducted in 2006. B.C.’s premier, Gordon Campbell from the B.C. Liberal Party, is against moving the province from open net pen fish farming to closed containment systems.

Environmental Impact

Caring for the environment is a highly held value in B.C., hence there are many non-governmental environmental organizations represented that one must take into account.

Views on Aquaculture

Living Oceans Society is an environmental organization opposed to fish farming as it is currently practiced. The organization claims that salmon farms harm the environment by spreading diseases and parasites to wild fish, producing waste and chemicals, and not being able to prevent farmed fish escapes. They believe fish farms are threatening the survival of wild salmon. Furthermore, Living Oceans Society is the founder of CAAR, which is a coalition of environmental groups, scientists and First Nations who have come together to protect wild salmon, coastal ecosystems, and communities from destructive aquaculture practices. CAAR is researching the impact of open net-cage salmon farms, and are working on solutions regarding closed containment technology (Living Oceans. *"Salmon Farms"*). However, according to Jerry Corriveau at DFO, land based aquaculture is currently too expensive to implement, the costs associated with it are high and it takes a large amount of electricity and power to implement. Land based aquaculture would create more pollution than open net fish farms, thus being unsustainable (Corriveau, 2009). Moreover, as closed containment systems are only viable for niche market fishes, for instance live tilapia and barramundi, implementation of closed contained systems in North America is not yet in progress. However, the open ocean Aquaculture Bill in the U.S. is proposing added costs for open net-pen production, which has been echoed by the B.C. special committee on sustainable

aquaculture that wants a complete transition to closed contained aquaculture (Ecoplant International,inc., 2008).

As mentioned earlier, the implications of the lawsuit regarding the province's right to manage salmon farming might affect Amatec and the fish farming industry's plan of expansion. The decision regarding this lawsuit will take effect 12 months after the ruling in February 2009. However, The Canadian Aquaculture Industry Alliance doesn't believe this will change anything (Canadian Aquaculture Industry Alliance. *"What's new"*).

"It's important to note that Canada's aquaculture industry abides by a strong regulatory framework – and this won't change regardless which level of government is responsible for oversight" (Canadian Aquaculture Industry Alliance. *"What's new"*).

Views on wild fisheries

According to the Wilderness Committee, commercial fishing of wild salmon must be greatly reduced until stocks recover their historical level. Accordingly, the commercial fishing industry must be shifted to a river fishery (Senichenko, 2009).

The Suzuki Foundation holds is the same view as the Wilderness Committee. They state that it is clear that the fishery industry, especially the salmon fisheries, needs to change as some stocks have declined to a level where they can no longer be fished (David Suzuki Foundation, 2009).

Recreational Fishing

Even though recreational fishing is not in our target market, it is still an important part of the fishing industry that is worth mentioning. The managing of recreational fishing is a shared responsibility between federal, provincial and territorial governments. The provinces are responsible for freshwater species with the exception of salmon in British Columbia.

(Fisheries and Ocean Canada. *“Recreational Fishing Regulations”*). The fresh water and tidal sport fishing sectors provide social, cultural, and economic benefits for the province.

Furthermore, anglers and sport fishing businesses wish to work together with those who manage the fisheries to secure a future for the fish (B.C. Government. Ministry of Environment). One has the choice between fishing saltwater or freshwater salmon, finfish or shellfish. In the fiscal year of 2006/2007, a total of 323 186 licenses were issued for recreational fishing in BC and 231 782 stamps, creating an income of \$6 649 788 CAD in total license and stamp revenues with GST. (Fisheries and Ocean Canada, 2009) Commercial fisheries have been rapidly blamed for the declining fish population. However, according to an article by Steven J. Cooke and Ian G. Cowx, the recreational fishing sector also has the potential to negatively affect fish and fisheries. The lack of global monitoring and statistics on recreational fishing participation, harvest, and catch-and-release has limited the ability to understand the magnitude of this fishing sector. It is therefore important to understand the extent of this market to help us predict the future of the B.C. fishing industry (Cooke & Cowx, 2004).

To sum up, the downward trend of the commercial fishery has also affected B.C. as the fisheries have declined and left many fishermen without an income. However, aquaculture is a profitable industry in B.C. even though there are people and organizations opposed to fish

farming the way it is currently practiced. Nonetheless, most people we have communicated with representing different viewpoints believe that fish farming will increase in the future, especially since wild fisheries alone cannot supply the future world demand for fish.

The Netting Industry in B.C.

The netting industry in B.C. is very fragmented, as there are consolidations in the industry as well as single players. We have detected approximately 11 netting suppliers, in which 9 are located in B.C. The contact information of the 11 netting suppliers is provided in appendix 6. Steveston, a small fishing town in B.C., hosts Redden net CO, Pacific Net and Twine, Towns Netting and Marine Supplies Ltd, and Nikka Fishing Marine. These suppliers specialize in fishing supplies and equipment to the fisheries and recreational fishing industry. However, when interviewing Kris Nakashima at Pacific Net and Twine, we found that distributing nets to the fisheries is not a profitable industry right now, as the fishery sector has been declining for the last ten to fifteen years. However, Kris mentioned that the distribution of nets was a lot higher for nets used in the aquaculture industry (Nakashima, 2009). Moreover, Doug Dickson at Smart Net System, a small netting supplier on Vancouver Island, distributes nets to the agriculture-, sports-, and fishing industry. For the most part his manufacturer in Asia customizes the products for him, so there is no need for him to join the nets himself. However, due to time constraints and quality, he must sometimes do it himself. He explains that a machine like the one Amatec offers can reduce production time from 1 ½ hours to only 8 minutes. Nonetheless, one cannot use such a machine for agriculture, as most agriculture nettings don't have a rope attached to it. That being said, the aquaculture industry is using bigger nets, where such a machine could be very useful (Dickson, 2009).

Most of the net suppliers to the aquaculture industry are situated in Campbell River, the hub for aquaculture in B.C. Campbell River Netloft, Quadra Pacific Netloft, Wavemaster and Cards Aquaculture are all located in this area. Most of their business is directed towards fish farms on Vancouver Island. Campbell River Netloft is owned by a Norwegian company called Mørenet and was already in possession of an Amatec machine (Anderson, 2009), as Mørenet has encouraged them to acquire it. Further, Wavemaster is also owned by a Norwegian company called Akva group (Online, 2009), whilst Quadra Pacific Netloft is a division within the Canadian aquaculture supplier, Cards Aquaculture (Quadra Pacific Netloft Ltd).

Kevin Online at Wavemaster provided us with useful information regarding his business. They do not join any of the nets because they import cheaper readymade nets from Chile. All they conduct is the service part, which is the washing and fixing of nets. However, Online admitted that production of nets locally would be possible in the future.

“What is going to be interesting is if the energy prices were to go back up and commodities are up high, there will be some shifting when social change occurs in countries like Chile, China and India. If we see this social change occur, we will see some of the labour being done there come back to these areas. It will no longer make sense shipping containers from China, India or Chile to here because the labour cost will be similar anyways.” (Online, 2009)

As mentioned earlier, we discovered that Campbell River Netloft was already using one of Amatec's machines as well as a machine from Buraschi. According to Doren Anderson, the service Amatec provides is much better than the service provided by Buraschi. Moreover,

they claimed that the machine was very useful as it decreases employee costs and production time. However, the machine would easily break if used for repair of previously used nets, because the dirt from the used nets gets caught in the machine. (Anderson, 2009)

Later, we were informed by Sigurd Mo, a technician at Amatec, that he had repaired the machine at Campbell River Netloft, and that you can indeed use the machine on used nets. In other words, this increases the opportunity for Amatec to succeed in the North American Market as a major part of a netting supplier's business is to repair used nets for the aquaculture industry (Mo, 2009).

The Pacific North American Fishing Industry Compared to Norway

The commercial fishing industry on the U.S. west coast has suffered from cutbacks and restrictions as the fish stocks are declining due to global warming and over fishing. However, Alaska's commercial fishing is an example for other states to follow, as they have managed to keep the fishing industry sustainable in recent years. When comparing the Pacific U.S. and B.C.'s commercial fishing industry to Norway, one discovers that the value of the commercial fishing industry in Norway is \$2.2 billion CAD, almost half (48 %) of the commercial fishing industry's value when counting the Norwegian, the U.S. (Oregon, Washington, Alaska and California) and the B.C. fishing industry, see appendices 8 and 9. However, Alaska is the most prominent contributor with \$1.6 billion CAD, followed by Washington, B.C., California and Oregon. In other words, the four areas' fishing industry is very small compared to Alaska and Norway. The same goes for aquaculture, where Norway is clearly the major exporter of farmed fin fish, see appendices 9 and 10. The U.S. North Pacific is not worth mentioning in the pie chart as their fish farming is insignificant compared to both Canada and Norway. As

Canada has the world's longest coast line, it is clear that the opportunity for expansion in the aquaculture industry could be tripled when compared to the volume distributed from Norway.

Literature Review

Internal Analysis

ACE – Model

Many factors contribute to a company's successful internationalization, but to succeed internationally a company must start by analyzing its internal attitude and support towards going global. By being involved and engaged in the process, competence will develop gradually (Solberg, 2006).

Attitude means the degree of risk aversion, understanding of cultures, market orientation etc. (Solberg, 2006). Amatec demonstrated that it views expansion positively because it already operates internationally, and their attitude towards globalization is positive.

Amatec's presence in Canada has until now been limited to their two customers on the East Coast, and one on the West Coast. Their willingness to expand in this market is moderate to high. They have a low degree of risk aversion and do not hesitate to contact possible customers wherever they see an opportunity.

By *Competence* we mean the company's internal ability to operate in a global marketplace (Solberg, 2006). Amatec does not have a distinct export division, but by having one or two

sales managers, they focus on developing strong relationships with each customer. They have attended numerous trade shows both nationally and internationally and have gained competence by years of trial and error.

Embodiment means that attitudes towards globalization are similar throughout the whole organization (Solberg, 2006). Since Amatec is a small organization with few departments, they have easily gained a high level of engagement throughout all parts of the company. Also, after three years of operating internationally, Amatec can already consider itself a global company. Furthermore, their presence at major international trade shows demonstrates an eagerness to explore new markets and potential customers.

From this, we can conclude that since Amatec already has gone international, their favourable attitudes and high embodiment is a part of the company's internal culture. Their success on the global market has made them willing to take risks and exploit opportunities. Even if they still have more to learn, they are a part of a positive circle and the possibility to develop is big.

The Bakka Internationalization Model

This model describes the internationalization of a company, divided into different phases. There are three phases outlined in this model; (1) *Trial Exporting*, (2) *Extensive Exporting*, (3) *Intensive Exporting*, (4) *Multinational Marketing*, and (5) *Global Marketing*. This is a descriptive model, which purpose is to describe the different factors that are influencing decision making in the different stages or phases in which a company can be categorized in (Solberg, 2006).

In the Bakka Internationalization Model, there are 7 factors to consider in order to classify your company in any of the 5 phases described above (Solberg, 2006), see appendix 11. First, Amatec is operating with strategic or operative exporting motives, because they are actively looking for costumers, rather than passively waiting for possible clients to approach them. In other words, Amatec can be found in the *Intensive exporting* phase regarding export motives. Second, Amatec is a market leader in Scandinavia, as well as exporting to 12 European countries (Riksheim, 2009). This implies that Amatec is currently in the *extensive phase* when it comes to choice of markets. Further, their market share can be described as *intensive exporting*, seeing their market share is increasing. The customer base is fragmented, they have some clients in one country and some in another, and hence it can't be described as comprehensive, because the market share is yet to take off.

Amatec's organizational structure is situated in between *extensive exporting* and *intensive exporting*. Their organization is comprised of a main office in Sykkylven and two smaller offices in Bergen and Oslo in Norway. However, they have one agent in Spain, but their sales force in Norway is limited. Amatec does not operate with an export section; their organizational structure is rather flat, because their own internal sales division is taking care of all national and international sales (Amatec, 2009). In other words, their entry strategy can be described as 'piggybacking', because Amatec mainly operates from within Norway. However, as mentioned earlier, they have one agent in Spain, which in that case directs them more towards *extensive export*.

Amatec's products are customized to fit the clients' needs. They have some promotion, mostly at tradeshows and brochures offered in both Norwegian and English. Normally, business to business companies do not spend much money on commercials and advertising

as business to consumer companies do. According to the report "Sizing US Marketing 2006" from Blackfriars Communications, B2B companies spend only 28% of their marketing budget on advertising compared to 40% for B2C companies (Miller, 2006). That is why they can be characterized as *extensive export*. Last but not least, Amatec has an annual return of CAD \$6.5 million, and profits excluding costs of about 3 million NOK (Amatec, 2009), which is a positive result compared to many other B2B companies in Norway, hence Amatec can be categorized as *intensive export* in this phase.

When summarizing all these different phases, we find that Amatec are moving from *extensive export* towards *intensive export*. Even though their main market is Scandinavia, it seems like export is becoming more and more prominent as their experience with export is increasing and new markets are penetrated.

External Analysis

PESTEL- Analysis

Political

Canada's head of state is Her Majesty Queen Elizabeth II whom is represented by the Governor General Michaëlle Jean (Governor General of Canada, 2009). Canada's head of government is Stephen Harper whom represents the Conservative Party. Canada is a federation of 10 provinces and 3 territories, each of which exercises considerable degree of political autonomy. The Parliament consists of the House of Commons in Ottawa with 310 elected members from individual constituencies and the Senate which has 104 members appointed by the Prime Minister. The capital city is Ottawa (Euromonitor International, 2008). Canada has a relatively liberal business environment. However, there are some restrictions on foreign ownership in selected industries. Medium-term potential growth has risen and now exceeds 3% per year (Euromonitor International, 2008).

The United States of America's head of state is President Barack Obama who represents the Democratic Party. The president is elected for a four year period and a maximum of two terms. The United States Congress is divided into the House of Representatives with 435 elected members and the Senate with 100 elected members. The USA is divided into 50 states and the capital city is Washington, DC (Euromonitor International, 2009). The U.S. government is currently studying ways to improve their complex and inefficient tax system; however this is not their first priority considering the current state of economy. The

corporate tax in the USA is somewhat higher than many European countries (Euromonitor International, 2009).

Political Risk

There is a long-standing division between western and eastern Canada; however this is somewhat irrelevant in this case because of the primary focus on the Pacific West Coast (Euromonitor International, 2008). The current jurisdictional “battle” between the federal government and the provinces is quite important (Cernetig 2009). Cernetig believes that the jurisdiction will be pushed back to the federal government and if so, there will be a slower and deeper analysis of the environmental consequences of fish farming because of lower political stakes. In the long term this could mean that the federal government will most likely enforce stricter regulations on the fish farmers leading them to use more technological advanced equipment and removing the need for fish nets.

Another political source of tension is Canada’s policy on the First Nations population which includes land claims, especially regarding natural resources (Euromonitor International, 2008). This is also important because of the First Nations population being a somewhat considerable player in the fishing industry. In the United States there are similar political issues regarding the Aboriginal population.

Trade Agreements

Canada and the EFTA countries Norway, Iceland, Switzerland and Lichtenstein signed a free trade agreement in January 2008 and Innovation Norway states that:

“The agreement is a first generation trade agreement as it only deals with trade and trade issues [and] does not cover services and investments. The agreement implies that tariffs on industrial products are removed and that tariffs on selected agriculture products are either removed or reduced “(Innovation Norway, 2009).

As mentioned earlier, this will undoubtedly help lower the entry barriers into the Canadian market. However, Doren Anderson claims that this trade agreement is very new, and has not yet been implemented in a way to be in favour of neither Canadian companies nor Norwegian companies trading with each other (Anderson, 2009). The United States of America and Norway do not currently have any trade agreements (Kaufmann).

Economic

In 2007, North American imports experienced a 6 %, which is a decrease from previous years. This was the smallest increase of all regions in 2007. In addition, Canada, for the first time was replaced by China as the United States’ leading supplier. (World Trade Organization, 2008). *“Canada recorded one of the weakest export growth rates among the leading traders due to sluggish exports to the United States, its major market.”* (World Trade Organization, 2008).

The United States experienced an economic upswing 4 years ago which was driven by domestic demand. However, in 2008 the U.S. entered a recession. The country’s potential for growth is falling and could reach a century time low. The US housing market has deteriorated dramatically, the spending on social security and Medicare is increasing at an unsustainable rate, the growth of private consumption is weakened severely and is predicted to continue to weaken in 2009 (Euromonitor International, 2009).

The current recession in the United States has created a ripple effect on the Canadian economy as well. Exports are falling abruptly, job losses are increasing and business spending is decreasing as Canada's 'baby-boomers' enter retirement, the dependency ratio will rise (Euromonitor International, 2008). Due to the influence from the US economy, Canada is currently having an economic slowdown, but has not entered a recession.

Socio-cultural

The Canadian business culture is quite similar to the American business culture. However the Canadian culture is slightly more formal. Because of the large size of both countries, there are cultural differences within the country as well. For example, the business culture in the west is more casual than in the east. Another important factor in Canada is the fact that they have two official languages; English and French. English is the dominant language in the country, but French is predominating in Quebec politics (Going Global, 2008. *"Going Global Career & Employment Resource Guide for Canada"*).

The Canadian people are generally very polite, respectful of authority, tend to avoid confrontation and are respectful of women and seniors. It is common to begin a conversation with small talk on neutral topics, even in a business setting. Some preferred topics could be weather or sports, especially hockey. It is a good idea to avoid topics such as personal finance, religion or politics (Going Global, 2008. *"Going Global Career & Employment Resource Guide for Canada"*). Also, Canadians take great pride in themselves and it is very important for them to distinguish themselves from Americans. One of the worst mistakes you can make in Canada is calling them American (Peloza, 2009).

Time and punctuality is considered important to Americans. If you do arrive a couple of minutes late it is usually alright, however if a delay can't be avoided, it is important to notify the other part of your late arrival. In addition, it is a common practice to note everything down on paper, everything from notes on conversations to meeting records and reports. However, nothing is binding until both parties have signed the document (Going Global, 2008 "Going Global Career & Employment Resource Guide for USA).

Environmental

The ongoing debate on how aquaculture pollutes the surrounding waters is quite heated. According to Greenpeace Canada:

"Harmful environmental and social impacts of aquaculture include destruction of habitat, the effects of escaped farm fish on wild species, depletion of wild stock caught for feed, disruption to the natural food chain and the threat to food security." (Greenpeace Canada. "Aquaculture").

But the story told in the media is often portrayed from the environmentalists' side. If you ask many First Nations and fish farmers, they are pro aquaculture because of the amount of jobs they create (Cernetig, 2009).

Aquaculture is not the only threat to environment, bottom trawling is assumed to be one of the most destructive fishing practices in the world. Bottom trawl nets can be enormous. The biggest have mouths the length of a rugby field. Some are weighted across the bottom with heavy steel rollers that indiscriminately smash and crush corals – they swallow everything in their path (Greenpeace Canada, 2004).

As mentioned earlier, global warming is a threat to the fishery, as the fish move further north due to warmer climate in the ocean (Doyle, 2009).

Legal

The conservation of salmon in the North Pacific Ocean is the responsibility of The North Pacific Anadromous Fish Commission. The members of this commission include Canada, USA, Russia, Japan and Korea. These countries work together to stop illegal fishing in this area. Fishery officers from USA and Canada conduct aerial patrols of a 4.1 million square kilometer area of the North Pacific. These annual missions are carried out using Canadian Air Force patrol aircraft" (Fisheries and Ocean Canada. Overfishing).

The jurisdiction over natural resources in Canada belongs to the various provinces, however the jurisdiction over coastal waters belong to the federal government. This creates a special situation where for example salmon which are located in both coastal waters and up stream in rivers are caught in a jurisdictional battle where it is unclear who has the responsibility of allocating and controlling the resources (Cernetig, 2009).

Technological

As of now, there are several technological solutions to aquaculture that renders nets useless, for example, the use of land-based aquaculture or closed containment tanks. The only obstacle for this technology to be used is the high costs and the fact that fish farmers' attitude towards changing from nets is quite negative. This is also mentioned in more detail under "substitutes" in the Porter's 5 forces part.

Porter's 5 Forces

Michael Porter identified five forces or threats that make a market either attractive or unattractive to enter (Kotler et al., 2006). These five forces are: the threat of intense segment rivalry, the threat of new entrants, the threat of substitute products, the threat of buyers' growing bargaining power, and the threat of suppliers' growing bargaining power.

Competition

Kotler et al. (2006) argue that a market is unattractive if the industry competition is intense, meaning many strong or aggressive competitors. Amatec has a somewhat intense competitive environment in the European market where there are competitors from Italy, France and Denmark. However, Amatec has a competitive advantage in that sense that they have a broader selection of products, specifically they offer more powerful equipment that can sew thicker material than their competitors. Amatec also has a competitive advantage in that they offer custom made products to their customers.

On the other hand, competitors like Union Special from the U.S. and N-C Carpet Binding from New Jersey, produce less complicated and cheaper machines which can be used to sew smaller nets for the commercial fishing industry (Dickson, 2009).

Customers

Kotler et al. argue that "a market is unattractive if buyers possess strong or growing bargaining power (Kotler et al., 2006:343)." Amatec has, as mentioned, several competitive advantages over their industry competitors; more powerful equipment, technological

advantage, and they offer custom made products. This gives the buyers less bargaining power compared to Amatec's competitors. Amatec's primary target market will be companies that produce and/or repair fish- and gill nets to commercial fisheries and fish farms. These buyers will have costs in order to switch to competing products because of the differentiated and customized nature of Amatec's products.

Suppliers

Kotler et al. (2006) argue that a market is unattractive if the threat of suppliers' bargaining power is high. One of Amatec's suppliers is the American producer Union Special which provides a template machine that is used in the Amarope machine. The rest of Amatec's product line is made of standard materials such as plastic and steel, where there is a large variety of suppliers to choose between.

"Suppliers tend to be powerful when they are concentrated or organized, when there are few substitutes, when supplied products are important and the cost of switching is high" (Kotler et al., 2006:343).

This is not the case for Amatec. However, in regards to the Amarope product, Union Special has a lot of bargaining power over Amatec as it is an essential part of their product, there are no substitutes and the cost of switching is very high. Additionally, should Amatec choose to enter the North-American Pacific market, Union Special could view this as a threat to their company as they would not only be Amatec's supplier, but also their competitor.

Potential Entrants

“A segment’s attractiveness varies with the height of its entry and exit barriers.” (Kotler et al., 2006:342). Canada and the EFTA countries signed a free trade agreement in January 2008 which states that tariffs on exported goods will either be reduced or completely removed. (Innovation Norway, 2009) This indicates that the entry barriers in this market are quite low as the tariffs on industrial products are removed. However, the exit barriers in this market are also quite low which mean that companies easily can exit the market when performing poorly. When both entry and exit barriers are low the returns are more stable but the profit potential is limited (Kotler et al., 2006).

A possible threat for Amatec if they enter the market successfully is that their European competitors could easily follow and copy them, and avoid a lot of the costs Amatec experienced in establishing their brand in this market.

Substitutes

“A segment is unattractive when there are actual or potential substitutes for the product which place a limit on prices and on profits” (Kotler et al., 2006:343)

Miro Cernetig (2009) speculates that the fish farming industry in Canada will be put under a microscope and that there will be lawsuits against them because they are damaging the wild fish population. If the fish farmers were forced legally to implement new technology such as land-based and closed containment systems, they would no longer need fish nets and half of Amatec’s target market would disappear. Additionally, the fish farming industry is the segment that is creating a growth in the overall fishing industry. This would mean that not

only would Amatec lose half their target market, but the other half they would keep is a declining market. These problems are not unique to Canada, as the wild fish populations in California and Oregon are declining. (Cernetig, 2009) Also, the heated debate in British Columbia will likely have ripple effects on the American system too.

Strategic Stage

SWOT-Analysis

The following analysis can be found in appendices 12 and 13, for a thorough explanation of the SWOT-Analysis.

Strengths

- Powerful and robust machines which can sew almost any material (1).
- A good winder which can produce more net in proportion to the rope which is important when there is a heavy load on the net (2).
- Amatec can customize their machines in order to fit each customer's individual need (3).
- Amatec has always had (and are still focusing on having) a long term relationship with all of their customers (4).
- Amatec has a good, large spare part facility, and the only one in Norway (5).

- Amatec operates in 12 countries and is constantly attending national and international trade shows (6).
- One of their biggest customers is MøreNot AS, which is well known internationally and a good reference (7).
- Some companies on the Pacific West Coast know about Amatec from before, one even use their products (8).
- Amatec has a good reputation of quality and reliability (9).
- Amatec is experiencing an overall increase in market share on the international market (10).

Weaknesses

- The distance between Norway and the North American West Coast is a challenge regarding service and follow up. However, if the market appears to be profitable, Amatec can partner with local distributors to take care of service (11).
- Amatec has a flat organizational structure with no separate export division. The sales department takes care of both national and international customers (12).
- Amatec has a fragmented customer base outside of Norway (13).
- No current trade agreements exist between Norway and the United States (14).

Opportunities

- Selling to secondary markets such as producers of nets to sports arenas (hockey, volleyball etc.) or other non-fishing related producers of nets (15).

- As many of the companies that produce nets join or mount the nets by hand, they can be convinced to purchase Amatec's products to increase productivity and decrease costs (16).
- Many of the fish farmers in British Columbia are of Norwegian descent, creating a familiarity that Amatec can leverage as a competitive advantage (17).
- Product superiority in form of both strength and customization over competitors could create an opportunity to penetrate the market successfully and establish a healthy customer base in North America (18).
- As the commercial fishery industry in North America is decreasing, the aquaculture industry is increasing; despite their lack of popularity they are generally much larger customers for companies like Amatec and therefore more desirable (19).
- Because of the differentiated and customized nature of Amatec's products their buyers will have high costs of switching suppliers (20).
- The demand for fish is estimated to increase with 70 % by 2030. In North America alone, an increase of 40 % is expected by 2010 (21).

Threats

- Impact of lawsuit; If the federal government achieves jurisdiction aquaculture in B.C., the process of obtaining licenses could slow down (22).
- Requirement of moving fish farms to land or to use technology such as closed containment systems that completely separate the farm from the surrounding waters (23).

- Diminishing market for both farmed fish because of environmental issues and wild fish because of stricter quotas on commercial fishing as a consequence of decreasing fish stocks (24).
- Union Special will have very high bargaining power over Amatec and may use this power to pressure Amatec if Union Special considers a potential entry into their home market to be a threat to their company (25).
- A possible threat could be if Amatec should choose to enter the market and succeed, their European competitors could easily follow them by copying their strategy (26).
- First Nations have the power to influence new licenses regarding fish farming in the area in which they live (27).
- Cheap hand sewn readymade nets manufactured in Asia, or South America that are sold directly to the end costumers. Such nets do not require joining or mounting as they are already customized and ready to go (28).

Strategic Problem Definition (SPD)

“How can Amatec leverage their powerful and technologically superior machines in cooperation with their healthy reputation of quality and reliability and their ability to customize products for each customer in order to successfully penetrate the Pacific West Coast market? In addition, how is it best to exploit the opportunities presented, such as the increasing aquaculture industry, the high customer costs of switching brands and persuading potential customers to switch from sewing by hand to using

Amatec's products? Lastly, how can Amatec avoid the threats of the diminishing market for commercial fishing while overcoming the problems connected to the long distance between Amatec's Norwegian office and the Pacific West Coast Market?"

Goals

According to Kotler et al. (2006), Solberg (2006) and Crockett (2009) the setting of goals is of the utmost importance when developing strategic courses of action. Kotler et al. (2006) emphasizes that goals must be (1) arranged hierarchically according to importance, (2) stated quantitatively whenever possible, (3) realistic, and (4) consistent. We have chosen to divide the setting of goals into two different sets; long term goals and short term goals.

Short Term Goals

The short term goals are objectives that should be reached within 12 months of entering the market and should be viewed as a tool to achieve the long term goals.

- Break-even the first year.
- Establish a minimum customer base of two purchasers to buy at least one of the three "flagship" products each.
- Establish customer relationships with the intent of providing service, product education and spare parts for the customers.

In order to create awareness of Amatec's superior quality and reliability the company must establish a customer base of at least two purchasers. By doing so, Amatec may be able to

move from an initial push marketing strategy to a pull marketing strategy where potential customers will create a larger demand for the products without Amatec having to market itself.

Long Term Goals

The long term goals are objectives set to be reached within 36 months, or 3 years after entering the market.

- Increase initial customer base from two customers to four customers of the previously mentioned “flagship” products.
- Increase sales of additional products (besides the flagship products) to 20% of total sales to this market.
- Focus primarily on the aquaculture industry with sales amounting to at least 65% of total sales in the Pacific West Coast market.
- Develop a strong reputation of quality and reliability in the Pacific West Coast market and create awareness among potential customers in this industry/market.
- Take on the role as a niche-oriented, quality provider of machines for joining and mounting nets and gill nets in North-America.

Critical Success Factors (CSF)

Critical Success Factors are those factors that must be achieved for the company to successfully penetrate the new market.

- Establish a small customer base in the Pacific West Coast in order to create cash flow, build a reputation and awareness in the new market and to create future sales of additional products and services to existing and potential customers.
- Maintain Amatec's existing reputation of good quality and reliability in the new market by continuing to focus on establishing customer relationships and providing customization, support and service in addition to their products.
- Focus on the aquaculture industry, in order to avoid establishing Amatec's brand in a diminishing market.
- Create a solution to the problem regarding the long distance between Amatec's Norwegian office and the Pacific West Coast.

Solberg's Nine Strategic Windows

Solberg (2006) argues that to place a brand in the nine strategic windows one has to analyze the industry's globality and the company's degree of internationalization. This is to generate possible strategies for the brand when entering a new market.

International Competitive Structure

Amatec's competitors in the North American market can be described as both local and international suppliers. However, they share in common the fact that they are usually small companies. Also, in the global market the industry is characterized by small local and international companies. In most countries the market leader is local, at least in the countries that have local suppliers. Therefore, the international competitive structure in this

industry should be viewed as mostly local, with elements of international structure where the companies are niche-oriented.

Globalization Forces

In regards to this particular industry, there are no protectionist regulations which favor local suppliers over international companies. In general, the Canadian consumers, like most other nationalities, are nationalistic in their product preferences. However, in this industry the company will operate very indirectly with the end-customer in the product chain and their preferences will therefore be irrelevant as this does not apply to Amatec's customers. When looking at the different purchase groups' preferences or traditions towards technical solutions we can see that many of Amatec's potential customers are bound to tradition when joining or mounting nets. This is done by hand by many of the companies.

The Company's Degree of Internationalization

International Business Culture

Solberg (2006) defines a company's international business culture as a set of attitudes and experiences which characterize a company's international engagements. Amatec is currently represented in 12 countries besides Norway. They already have customers on the Canadian East Coast. The company has a flat organizational structure with no export division; however their experience in dealing with customers abroad and maintaining customer relationships gives them experience in regards to international business culture. Amatec is a relatively small company and the employee's opinions and attitudes are interrelated to the company's desire to expand internationally. When looking at the ACE-model (Solberg, 2006:32) we can

see that Amatec's attitudes and embodiment is part of the company's internal culture and their success so far on the global market has allowed them to take risks and exploit opportunities. They still have a lot to learn as an international company but their potential for development is great.

Market Share in Primary Market

Amatec is the market leader in the Scandinavian market with an annual return of approximately \$CAD 6.35 million (Riksheim, 2009). However, it is important to keep in mind that the Scandinavian market is quite small compared to the North-American market.

The Importance of Network

Solberg (2006) argues that an important prerequisite for a successful export commitment lies in a well developed market network. He further argues that the information in the network along with trust, loyalty and common norms between the parties will not only affect the company's *ability* to develop global strategies, but also *motivate* the company to create a deeper involvement in international markets. As mentioned, the only current agent they have is the one located in Spain. Even though they sell their products to companies in several countries, they simply export; without having facilities or agents present in the mentioned countries.

Conclusion

The international competitive structure in this industry should be viewed as mostly local, with elements of international structure and where the companies are niche-oriented. When analyzing the globalization forces we can see that there are no protectionist regulations that favor local suppliers over international companies. Many of Amatec's potential customers are however bound to tradition when joining or mounting nets. This is done by hand by many of the companies. We can therefore conclude that the industry's globality is medium to low.

Amatec's attitudes and embodiment is part of the company's internal culture and their success so far on the global market has allowed them to take risks and exploit opportunities. They still have a lot to learn as an international company but their potential for development is great. Amatec is the market leader in Scandinavia, and the growth in this market is low. Besides Amatec's agent in Spain, they only operate internationally through direct sales. The Company's Degree of Internationalization should also be viewed as medium to low.

This places Amatec somewhere between the four windows; (1) Stay in your primary market, (2) Consolidate your position in established markets, (3) Consider expansion in new markets, and (4) Seek niches in International markets. Amatec is already an international company and the first window – stay in your primary market – is therefore not an option for them, see appendix 14.

Consolidate Your Position in Established Markets

Solberg (2006) argues that in this window the company is established in markets that can be viewed as isolated. The company has developed a certain position in some export markets where they have gathered some international experience. In a situation like this it is important to continue building market position in these markets by analyzing and cutting in product markets that are not profitable and fortify those that are profitable.

Consider Expansion in New Markets

In the middle window we find companies that have established a position in international markets, and that have developed an international business culture in which they can build on and develop further. Strategically, the company should prepare for opportunities steer in a global direction. In other words, the company should establish networks and market positions in strategically important markets. By doing so the company will be better prepared if the market should move in a more global direction. Strategically important markets are markets where the largest competitors have their home- or largest markets. This may seem like an ambitious strategy but in order to survive as an independent company in a globalized industry it is necessary to be able to strike back where it hurts the competition the most.

Seek Niches in International Markets

In this window, the company has some international experience but at the same time finds itself in a market where global competition has a certain impact. A change in external

circumstances can make the company vulnerable to competition in their home market. Here the company should seek niches in international markets where they can identify clear competitive advantages through differentiation. The main point in this strategy is to slowly climb up the y-axis in the nine windows and increase the company's degree of internationalization and by doing so; expose the company to less risk.

Based on the information gathered in the market analysis and the various models it is recommended that Amatec focus on the window suggesting that the company should seek niches in international markets, see appendix 14. Solberg (2006) argues that companies with limited resources should focus on international niches; as is the case with Amatec.

Strategy

After establishing the overall strategic recommendation for Amatec; to seek international niches, the report will now move on to focusing on developing an optimal entry strategy.

Entry Strategy

Solberg (2006) argues that entry strategies in international markets depend on two factors; with or without local production and with or without investments. The options for without local production and without investments are; (1) export house, (2) importers, (3) agent, and (4) directly to customer. The options for without local production and with investment are; (1) sales office, (2) warehouse, and (3) service unit. The options for with local production and without investment are; (1) licensing, (2) rental production, and (3) management contracts.

Lastly, the options for with local production and with investment are; (1) fully owned production facility and (2) strategic alliance.

Considering Amatec's limited resources and the need for local production being low, it is not recommended that the company initializes local production. The following discussion will therefore focus on a strategic option that does not include local production or investments.

Export House

By using an export house Amatec would not need to invest large sums to penetrate the market. The export house would be responsible for the financial aspects, as well as sales and networking. However, they entry mode gives a lot of control in regards to marketing efforts to the export house (Solberg, 2006). Additionally, the export house will not be able to provide the customers with the service and support needed to uphold the reputation that Amatec is known for. In order for Amatec to differentiate their brand in regards to quality and reliability, proper customer follow up is necessary. An export house will simply not have the expertise or the motivation needed for such follow up.

Agent

An agent's most important responsibilities are to promote and convey sales and inform the exporter of market conditions. When it comes to all other functions of the distribution system the exporter must take care of these himself or give the task to other intermediaries. The advantage of using an agent is that the exporter keeps most of the control over marketing efforts and in choosing the right agent, the exporter can exploit the agent's

familiarity with the market and the product without particularly large investments. The agent is usually paid in the form of provision which is mostly proportional to export volume. Another advantage of using an agent is the high level of involvement from the exporter alongside the relatively low costs. This is a very good way for companies to gain international competence and a better understanding of the market. The use of an agent is therefore a good “stepping stone” if the company wishes to establish, for example, a sales office in the new market in the future. One of the major drawbacks of using an agent is that it can be quite difficult to break ties should they fail to meet certain expectations. The use of an agent usually has high exit barriers and is often very protected by most countries’ regulations.

Directly to Customer

Exporting without representation or exporting directly to the customer means that there is direct contact between the exporter and the customers without any costly intermediaries. However this strategy has certain demands on the organization at home. According to Solberg (2006) exporting without representation is preferable when the producer has few customers in the market, when direct export is a “stepping stone” towards a broader market involvement and when the export market is geographically close. The latter is far from true in regards to Amatec and despite their experience in using this strategy in other international markets it is not recommended for the Pacific West Coast market.

Sales Office

Establishing a sales office in the new market is the form of representation which gives the exporter the most contact with the market itself. Despite the high costs of establishing a

sales office, the company gains full control over marketing efforts and the learning curve in regards to international experience is remarkable. However, this strategy also demands a great deal of financial risk and involvement from the company. To establish a sales office often requires a certain export volume in order to cover the costs. Despite this many companies argue that a sales office is necessary in order to reach these export volumes (Solberg, 2006). Although this strategy could prove quite successful for Amatec in the future, it is recommended that they secure a “foothold” in the market first before such a strategy is used.

Summary

An export house will not have the experience or the motivation to follow up with customers in a way that is consistent with Amatec’s strong reputation of quality and reliability.

Additionally, by using an export house Amatec will have to relinquish much of the control over marketing efforts to experience as strong learning curve in regards to international export. Because of the large geographical distances between Norway and the Pacific West Coast, it is not recommended to use a direct export strategy. Furthermore, establishing a sales office has considerable financial risk connected to it. However, this strategy should most definitely be kept in mind if Amatec secures a “foothold” in the new market. This brings us to the recommended course of action. It is recommended that Amatec uses the services of an agent. By doing so, they will reduce the level financial risk considerably and by keeping most of the control over marketing efforts they will gain valuable experience in the market. If the strategy shows successful the company may consider establishing a sales office in the future. However it is important to keep in mind the importance of picking a

good agent as well as considering a clause in the agent's contract that prohibits paying the provision after the customer has paid. This is to avoid the agent selling products to somewhat "doubtful" customers.

Porter's Generic Strategies

Overall Cost Leadership

Kotler et al. (2006) argues that when using this strategy the company strives to achieve the lowest production and distribution costs in order to increase market share by offering a lower price than its competitors.

Differentiation

Where the cost leadership strategy focuses on keeping costs and prices as low as possible; the differentiation strategy focuses more on separating the brand from competing brands by establishing a reputation for better quality, delivery, service, etc. than their competition. In order for this strategy to be efficient the reputation must not be unjust or in other words; the company has to perform in the area in which they have differentiated their brand.

Focus

When using a focus strategy, the company focuses on one or more narrow market segments. Here the company focuses on the relationship with the customer and furthermore pursues either a cost leadership strategy or a differentiation strategy within the target segment.

In regards to Amatec, it is recommended that they use a focus strategy where they focus their marketing efforts on a narrow market segment; more precisely the aquaculture industry. Furthermore Amatec should pursue a differentiation strategy within this segment where they focus on differentiating their brand in regards to quality, reliability and efficiency. Appendix 15 further shows where Amatec is placed in Porter's 5 generic strategies.

Market Strategy

Target Market

In order to successfully penetrate the Pacific West Coast market, Amatec should clearly identify their target market. The initial market analysis in this paper has generated several alternatives to consider.

Primary

Amatec's primary target market should be, as previously mentioned, the aquaculture industry. This is a growing market which we believe Amatec can exploit. However, it is prudent to bear in mind that the threat of aquaculture shifting from net based containments to closed containments or land-based tanks is very probable, at least in the future. Because of this it is recommended that Amatec establishes their brand in the market and when or if the industry moves on towards using dissimilar technology the company should be prepared to prioritize other target markets. Although it is recommended to focus on marketing efforts

towards the aquaculture industry, the commercial fishing industry should not be completely ignored despite the fact that it is a decreasing market, it should not be completely ignored.

Secondary

The optimal secondary market for Amatec is the sports net market. This is a large market that uses smaller nets than typical fishing nets. This market consists of nets for sports like golf, hockey, alpine skiing and so on. Usually the net is in place to serve as protection for the audience or surrounding areas. Although there are potential clients located several places throughout the Pacific West Coast, it is more popular further south because of the warmer climate. We believe that this market could potentially replace the aquaculture market as a primary market, should the market be forced to move away from traditional nets and towards closed containments or land based aquaculture. This is why Amatec should get a foothold in the sports net market in order to ease the transition into this market in the future.

Demand Estimation

Kotler et al. (2006) argue that successful demand estimation should include the factors of market potential, market forecast and the market minimum for entering the market. In Amatec's case, the market has a limited market potential as there is only a small fixed number of potential customers. However, some of the potential customers have several stores at different locations. Additionally, Amatec has a relatively high profit per sold

machine because of the costs of product customization and the forementioned limitation of potential sales volume.

Amatec's market potential includes 11 potential customers purchasing 3 machines each (one of each of the flagship products), customer training as well as product service (maintenance or repairs) once a year. Additional products (spare parts, threads, etc.) should potentially make up 25% of sales per customer. See appendix 18.

The market forecast for Amatec is similar to their long term goals and is estimated to be four potential customers purchasing 1 machine (TR1) each, customer training and annual service. Additional products should make up 20% of total sales. See appendix 18.

The market minimum in order for Amatec to succeed in the Pacific West Coast market require 2 potential customers purchasing 1 machine (TR1) each, customer training and additional products making up 10% of total sales. See appendix 18.

Marketing Mix

Amatec does not sell directly to consumers, but to businesses specializing in the distribution of nets. This changes how the company should develop their marketing mix. Even though several elements of Kotler et al. (2006) theory of developing a successful marketing mix is present; such as product, price and place, it is important to keep in mind that Amatec is a business to business company and the marketing mix should be adapted accordingly. Therefore we have chosen to add elements to the marketing mix in form of prospect, promise and position (Celli).

Prospect

Michelangelo Celli argues that prospect is the customer's need, which creates an opportunity for the company (Celli). The process of joining and mounting nets in the North American market is bound to certain traditions, such as joining nets by hand. Amatec's main arguments for changing this process is decreased costs, increased efficiency, and keeping jobs locally instead of outsourcing the production to Asia or other low cost countries. However, convincing potential customers to purchase Amatec's products is much easier when done in person as opposed to advertising by telephone, mail or electronically. The product's technological superiority and ability to sew thicker, bigger ropes and nets, resulting in nets stronger that are stronger and more durable, is more convincing when actually shown to the potential customer. This supports the recommendation of Amatec hiring an agent in North-America.

Promise

Celli argues that the company's promise is "the factual/intimacy argument for why you are superior (Celli)." Amatec will promise their customers a customized product that suits their needs in the best possible way. They will promise quality and reliability in regards to both product and service offered. The company will continue their effective relationship marketing and strive on upholding their strong reputation. According to Campbell River Netloft, Amatec has an advantage compared to Buraschi, their biggest competitor, because Buraschi's service is not adequate. Buraschi is only performing the bare minimum service required. According to Campbell River Netloft, they came for a service visit, but left right

after repairing the machine without any explanation of why it was damaged or solutions to how they could prevent it in the future. (Anderson, 2009) In other words, Amatec can gain market share over Buraschi, as their service is proven to be better, especially as we recommend hiring an agent that will offer instant service to customers who have requests regarding the machines.

Product

Kotler et al. (2006) argues that there are five product levels; the core benefit, the basic product, the extended product, the augmented product and the potential product. These five levels constitute a customer value hierarchy. Amatec's core benefit is the means to mount and join nets. The basic product is a sewing machine able to fulfill the product's core benefit. The expected product is the customer training for first time customers, as well as the quality, reliability and service Amatec provides. The augmented product is the customization of each product to fit the customer's needs. Lastly, we have the potential product which is all the possible augmentations and transformations the product might undergo in the future; on this note we can add that Amatec works hard to develop new ways, both in form of product development and service offerings, to satisfy the customers' needs. Celli argues that the product is where "the rubber meets the road [and] delivering what was promised." Amatec must adapt the products to the customers' needs, which might be different from customer to customer, and from country to country. Even though Canada is quite similar to Norway in terms of culture, Amatec needs to adapt their user manuals to the market in Canada, as the language is English and many customers might have to do

many smaller repairs themselves on the machines, as it is costly to get a representative from Amatec to fix the machine.

Position

Position is the sum total advantage that is created over your competition by managing prospect, promise and product with excellence. To sum up, Amatec can offer excellence in terms of customizing their product for customers, offering superior service over their competitors, especially Buraschi, and convincing potential customers of the benefits in introducing one of Amatec's machines to their manufacturing process. Amatec needs to position itself as an experienced provider of sewing machines to the netting industry, in particular the fishing industry, offering customized, stronger and more efficient machines than their competitors. Further, as service and maintenance on machines are crucial, Amatec needs to position itself as a trustworthy and reliable service provider. In other words, cooperation with customers allows new and innovative solutions to arise, in which will benefit both customers and Amatec.

Price

In comparison, Amatec's products are more expensive than their competitors. For instance, NC Carpet Bindings offers Union Special Machines to the netting industry for a price of \$11,900 U.S. dollars, which is the most expensive machine they offer (Netting Machinery, 2007). However, as mentioned earlier, Amatec's products are customized, and Amatec often has to negotiate the price with their customers. Additionally, Amatec's machines are

stronger and more efficient than their competitors which allows Amatec to set a higher price and in turn indicating higher quality.

Place

As concluded in our market analysis and recommended primary target market, the aquaculture industry, more specifically fish farming, is the most profitable business opportunity. Commercial fishing is declining and regulatory bodies are restricting the opportunity to fish in both American and Canadian waters. However, fish farming is expected to expand in Canada and the U.S., even though fish farming in the U.S. is very limited compared to Canada. In other words, Amatec should focus on the Canadian market, as British Columbia already has an established fish farming industry in comparison to the U.S. The agent will be based in B.C., and as the market becomes saturated, it will be easier for the agent to further take action in the U.S., especially Washington, as this is currently the only state with fish farming on the Pacific West Coast.

Promotion

Amatec advertises through their website and national and international trade shows, in addition to advertisements in Norwegian industry journals. Their most important trade shows regarding the international market are the annual “Aqua Nor” in Trondheim, Norway (the world’s largest aquaculture trade show) and “World Fishing” in Vigo, Spain where customers and fish gear suppliers from all over the world meet. Previously they have also been to trade shows in Turkey and Scotland. Amatec is dependent on direct marketing with

their customers. They search on the internet and in articles to find potential customers. If they find someone interesting they either send out an e-mail or call the company directly. If the company is interested Amatec send out DVD's and brochures to provide more information and eventually pay them a visit.

If Amatec should expand into the North American market, they need to become more visible to their potential customers. Regarding their website, much can be done to reach out to a broader audience (Dickson, 2009). For example, the quality of pictures and instructional videos can be improved; also the design and accessibility of the webpage are areas of improvement to provide the customer with an easier and better understanding of Amatec's products and services. Some suggestions for improvement are that Amatec actually posts their instructional videos on their webpage. This can be done by simply posting their videos on Youtube.com, which is a free service and then linking to these videos on their website. Also, we recommend updating their website, especially the English version, improving spelling and grammar mistakes, as well as perhaps improving it to make the interface easier to use. For example, on their sites they have spelled the name of the Amatacker product in three different ways, which can give potential customers the wrong impression of the company's professionalism. These improvements will give the company a more professional business image.

There are also several trade shows in North America that may be useful for Amatec to attend in order to gain better insight into this market. The most important would be the "Pacific Marine Expo" in Seattle, which is the largest commercial marine tradeshow on the West Coast.

Financial

Given that the only investment needed by Amatec is a 20% provision to their agent and based on the calculated estimate in appendix 18, the potential revenues for the various scenarios are:

- Market potential profit; \$512,595.9 CAD
- Market forecast profit; \$52,211 CAD
- Market minimum profit; \$26,105.5 CAD

These projections are based on the product cost chart in appendix 18. The projections are also forecasting a sales potential of 3 units per year. The most important scenario to notice is the market forecast which is the most likely prediction, should Amatec choose to enter this market.

Amatec's usual policy is that the customer pays for shipping and the authors see no reason to change this policy. In British Columbia the federal and provincial taxes amount to 12%. The federal Goods and Services Tax (GST) is 5% (Canada-Ontario Business Service Centre, 2008) and the British Columbia Sales Tax is 7% (Tax Tips, 2009). In Norway, registered companies receive a refund for taxes paid to other countries by the government and only have to pay an investment charge on machines that are not directly involved in adding value to the company's end product (Amatec, 2009). An industrial sewing machine is therefore subject to the mentioned investment charge. The 12% sales tax in B.C. is calculated into the profit projections above because they have to be paid, despite the fact they are refunded at a later stage. Amatec also charges for a "forced" customer training session for new customers, which is both for the customer and Amatec. The customers in most cases save

money because they receive a proper education in the use and maintenance of the products and have less need for service and repairs in the future. Amatec charges CAD 1000 for these sessions, in addition to travel and lodging expenses.

Lastly, some of the numbers in this paragraph are confidential and will therefore only be printed in the version of this paper given to Amatec.

Shipping and Handling

The machines are assembled to a Euro pallet, with a custom made robust carton strapped to the pallet. Amatec usually ships their machines by sea cargo but if the customer needs the machine immediately they provide an offer on air cargo. The customer pays for shipping and handling. It is important for both Amatec and the customer that the shipping is insured, which is why Amatec often organizes and pays for the shipping and the insurance on behalf of the customer, to be certain that the shipping is insured. If the package is not insured and something happens to it during transport, it may lead to conflicts between Amatec and the customer because they do not want to pay for a broken machine. The customer is in charge of paying for import prices and taxes (Mo, 2009).

Here is an example of shipping prices from Norway to Vancouver Island:

Air Cargo - \$CAD 1,655 - Shipping time approximately 1 week

Sea Cargo - \$CAD 1,146 - Shipping time approximately 5 weeks

Main Strategy

Hiring a Sales Agent in North America

It is recommended that Amatec hires a sales agent that will be located in British Columbia, because this is believed to be Amatec's best alternative of expansion. By using an agent, Amatec will be able to receive market updates and the potential agent will be able to contact the potential market better than Amatec can achieve over the phone or electronically.

As ambassadors for Amatec, we have experienced that it is difficult to get in touch with potential customers over the phone and especially difficult to gauge their interest toward Amatec's products. However, when we met with potential customers face to face and showed them a demonstration of how the products work, they seemed more interested.

Amatec's agent will be required to have strong technical knowledge as well as the necessary sales skills. Instead of having to recruit, train and finance an employee for Amatec, we recommend hiring a local agent from an outside sales agency. This person will represent Amatec in Canada and will be responsible for selling Amatec's products. An agent should be hired here in Canada due to economic reasons that tie with travel and cargo that is too time consuming for Amatec.

The potential agent will also function as a service provider if there is something wrong with the machines in exchange for a commission or fee computed as a percentage of sales generated. The agent will receive a commission of around 20 percent per sales.

The potential agent can represent Amatec's products at different tradeshow around the Pacific West Coast. This will create a great opportunity for Amatec to get in touch with local

suppliers and create a network in order for Amatec to effectively distribute the product to the new market.

The Optimal Agent

It is recommended that the agent is hired solely on a provision basis, were the agent receives around 20 per cent of sales. This to increase the chances for a successful hire, and to reduce investment costs.

After consulting Amatec it was revealed that the company often receives enquiries from individuals that request to represent the company in various countries. However, this is a course of action that is not recommended for Amatec. The research team recommends contacting Sheryl Lee at Campbell River Netloft. She has a unique insight into both the market and Amatec's products and will be able to represent the company in a very professional and successful way. When that is said; it is recommended that the company conducts a proper screening process and not hiring the recommended agent blindly. Also, by contacting a professional agency the company will increase the chances of a successful hire.

Alternative Strategies

Direct Sales

Having direct sales as an alternative for Amatec involves Amatec providing the product and service directly to the customer with no intermediary. Direct sales will be direct to

customers away from Amatec's current locations. One-on-one demonstrations will be provided, where the Amatec representative brings the sewing machine over to the customers' location. This will be done in the customer's retail location, so the customers will benefit from direct sales due to convenience and service that will be provided by an Amatec representative. Including personal demonstrations and explanations of the products, direct delivery, and generous satisfaction guarantees. A positive side of participating in direct sales is the low cost because there is no required inventory or cost commitments to begin a sale. Limitations to this alternative are the difficulties of approaching a possible customer when their level of knowledge of the product and its operations are limited. Direct sales could also be executed at trade shows. This option gives Amatec a better chance of convincing potential buyers

Golf Net Industry

Another option for Amatec is the customization of sewing machines for the golf net industry. The golf industry is a large industry in North America, especially in the south. According to the National Golf foundation there are 15,970 facilities in the U.S., 11,555 of which are open to the public. The states with a majority of golf facilities are as follows: (1) Florida: 1,060, (2) California: 927, (3) Michigan: 836 (4) Texas: 832, and (5) New York: 818. (National Golf Foundation)

In British Columbia there are a total of 217 golf courses. They are divided as followed: (1) Vancouver: 70, (2) Vancouver Island: 47, (3) Okanagan: 27, (4) Kamloops: 24, (5) the

Kootenays Region, (6) Northern BC Peace River: 15, (7) BC Rockies Region: 13, and (8) Caribou Chicotin Region: 5. (B.C. Adventure)

That being said, there will be limitations to face in entering the golf nets market for Amatec, such as several local distributors of sewing machines. They will most likely offer less complicated machines at a lower price. Examples of these are the same as mentioned as Amatec's competitors; Union Special and NC Carpet Bindings.

Conclusions and Recommendations

This market report's initial research problem was defined as:

"Whether there is an opportunity for Amatec to expand their business to include the Pacific West Coast, and if there exists a demand for Amatec's products in this market which will lead to profits exceeding the costs of entering this market?"

This has been the basis for the entire report. The research team exhausted both primary and secondary research material in order to accurately answer this question. The material included personal interviews via telephone or in person as well as publications, interactive and printed sources, academic journals and literature.

By using the information provided in the initial market report the research team conducted a SWOT-Analysis, followed by placing the results in a competence, opportunity, and threat matrix. This created the foundation for the strategic problem definition:

“How can Amatec use their more powerful and technologically superior machines alongside their good reputation of quality and reliability and their willingness to customize the products for each customer to successfully penetrate the Pacific West Coast market and exploit opportunities such as the expanding aquaculture industry, the high consumer costs of switching brands, and persuading potential customers to switch from sewing by hand to using Amatec’s products? Additionally, how can Amatec avoid the threats of the current recession’s effects on the industry and the diminishing market for commercial fishing while overcoming the problems connected to the long distance between Amatec’s Norwegian office and the Pacific West Coast Market?”

After developing the strategic problem definition and creating short and long term goals as well as identifying the key success factors the research team developed several strategic options for Amatec. The options were further discussed and the overall strategic option of seeking international niches was recommended. With regards to an entry strategy into the Pacific West Coast, it is recommended that Amatec hire an agent which should be based out of Vancouver, B.C. The research team concludes that producers of nets for the aquaculture industry are the primary market. This particular market has the greatest potential in BC. Despite choosing aquaculture as the primary market the commercial fishing industry should not be completely excluded. Furthermore, based on the fact that Washington, Alaska and British Columbia are the most lucrative commercial fishery markets B.C. is the most logic geographic choice.

The selection of an agent is a task best suited for Amatec AS. After consulting the company it was revealed that Amatec often receives inquiries from individuals who wish to represent

the company in various countries. The research team recommends contacting Sheryl Lee at Campbell River Netloft. She has a unique insight into both the market and Amatec's products and will be able to represent the company in a very professional and successful way. When that is said; it is recommended that the company conducts a proper screening process and not hiring the recommended agent blindly. However, it is recommended that professional agencies are considered and used to increase the chances of a successful hire. Additionally, it is recommended that the agent is hired solely on a provisional basis, where the agent receives around 20% of sales. This to increase the chances for a successful hire and to reduce investment costs.

Further courses of action that is recommended include continued participation in trade shows, an upgrade of the current website "www.amatec.no", additional investigation into the sports net industry in North-America, as well as closely monitoring the situation regarding technological advancements in form of closed containments and land-based aquaculture.

- Amatec has for several years participated at industry trade shows in various countries in fact they have actively used these trade shows to sell their products to potential customers. It is recommended that they continue this in North-America. The most important would be the "Pacific Marine Expo" in Seattle, which is the largest commercial marine tradeshow on the West Coast.
- Furthermore, it is recommended that Amatec upgrades their website. They should post instructional videos by using a free online video site such as "www.youtube.com" and linking to them on their website. The company should also

edit the English version of their webpage, especially by correcting grammatical and spelling mistakes, in addition to updating the whole site in order to make the interface easier to navigate.

- It is also recommended that Amatec further investigates the opportunity for entering the North-American sports net market. This particular market shows great potential in the research team's initial investigation, however, this requires significantly more insight in order to make a proper decision.
- Finally, Amatec is advised to closely monitor the situation of aquaculture in the Canadian market with regards to the use of newer technology such as closed containment and land-based farms. Even though research indicates that this is years from actualization, it is a very big threat for Amatec and should be monitored accordingly.

Discussion

The following section will undertake the research team's criticism and limitations of certain aspects of the report, as well as suggestions for further investigations that should be conducted by Amatec.

Criticism

Canada is the second largest landmass in the world and its large geographical distances has made the possibility of thoroughly researching the entire Canadian market very difficult. As a

consequence the authors have focused their attention to the Pacific West Coast including the American states California, Oregon, Washington, as well as the Canadian province of British Columbia. It has proven difficult to portray the American states as accurately as B.C. because of the geographical distances.

The primary research conducted has mostly been personal interviews, either through the telephone or in person. Not only do personal interviews tend to be biased, it is challenging to properly screen the information collected; in addition, by communicating via phone, several misunderstandings have arisen because of the misuse of technical terminology. Despite these misunderstandings the research team has been able to identify and correct them.

In the financial section of the report the findings made are only estimations. This is a consequence of the research group not receiving full financial access to Amatec's data, as well as the additional time and effort it would require to develop a complete financial assessment of the market.

Further Studies

The research team recommends that Amatec initialize further investigation in the following areas

- The screening process of hiring an agent to represent Amatec in Canada and the U.S. is crucial to the success of market entry. It is recommended that the company seek professional agencies to give them advice on the topic. This, alongside hiring the

agent solely on a provisional based contract, will help ensure the enthusiasm and motivation required from the agent.

- It is also recommended that Amatec further studies the sports net market. Initial study shows that this market could prove quite profitable for Amatec, however since the primary focus of this report is the fishing industry, further research is required.
- Lastly it is recommended that Amatec carefully monitors the aquaculture industry in Canada with regards to the implementation of newer technology such as land-based and closed containments.

Literature List

- Alaska Department of Fish and Game. "ADF&G Mission Statement". Retrieved February 2009, from <http://www.adfg.state.ak.us/mission.php>
- Alaska Marine Conservation Council. "Oppose Finfish farming". Retrieved March 2009, from <http://www.akmarine.org/our-work/oppose-finish-farming>
- Alaska Marine Conservation Council. "Offshore Aquaculture: FAQs". Retrieved February 2009, from <http://www.akmarine.org/our-work/oppose-finish-farming/offshore-aquaculture-frequently-asked-questions-faqs>
- Amatec. (2009) Retrieved February 2009, from <http://www.amatec.no/default.asp?menu=1>
- Anderson, Doran. (2009.April). Telephone and Face to Face Interview with Anderson. Campbell River Netloft.
- B.C Adventure. Retrieved April 2009, from <http://bcadventure.com/>
- B.C. Government – Ministry of Environment. "Recreational Freshwater Fishing". Retrieved March 2009, from <http://www.env.gov.bc.ca/fw/fish>
- B.C. Slamon Farmers Association. (2009). "Our opportunity to be world leaders".
- B.C. Slamon Farmers Association. "About Salmon Farming". Retrieved April 2009, from http://www.salmonfarmers.org/about_salmon_farming.php
- B.C. Stats. (2007) Ministry of Environment. "British Columbia's Fisheries and Aquaculture Sector". Retrieved March 2007, from <http://www.env.gov.bc.ca/omfd/reports/BC-Fisheries-Aquaculture-Sector-2007.pdf>
- Bidges, Kathy. (2009). Contact with Bridges at Oregon Aquaculture Association (OAA)
- Bright, Kevin. (2009) "American Gold Seafoods". Telephone interview.
- California Department of Fish and Game. (2009). "Commercial Fishing Licenses and Permits". Retrieved April 2009, from http://www.dfg.ca.gov/licensing/pdffiles/cf_items_10yr.pdf
- Canada-Ontario Business Service Centre (COBSC). (2008). "Goods and Service Tax (GST) and Harmonized Sales Tax (HST)". Retrieved April 2009, from http://www.canadabusiness.ca/servlet/ContentServer?cid=1184870052959&pagename=CBSC_ON%2Fdisplay&lang=en&c=GuideInfoGuide#2. Federal Sales Tax
- Canadian Aquaculture Industry Alliance. "Opportunity for expansion – Global Need for

- Aquaculture*". Retrieved March 2009, from <http://www.aquaculture.ca/files/opportunity-expansion.php>
- Canadian Aquaculture Industry Alliance. "*Production and Markets – Canadian Aquaculture Species*". Retrieved March 2009, from <http://www.aquaculture.ca/files/production-markets.php>
- Canadian Aquaculture Industry Alliance. "*Safe Guarding the Environment - Rigorous Government Regulations*". Retrieved March 2009, from <http://www.aquaculture.ca/files/environment.php>
- Canadian Aquaculture Industry Alliance. "*What's New –Job Posting*". Retrieved March 2009, from <http://www.aquaculture.ca/files/whats-new.php>
- Celli, Michelangelo. Sales Vantage. "*The True 4 P's of B2B Marketing for CEO*". Retrieved 2009, from <http://www.salesvantage.com/article/1041/The-True-4-P-s-of-B2B-Marketing-for-CEOs>
- Cernetig, Miro. (2009.March). Face to Face Interview with Cernetig. Journalist in The Vancouver Sun.
- Chilton, Guy. (2009.April). Telephone Interview with Chilton from Oregon Department of fish and wildlife.
- City of Richmond. "*Fishing Industry in British Columbia*". Retrieved March 2009, from <http://www.richmond.ca/cityhall/archives/exhibits/bcpackersinsurancephotosandmaps/fishingindustryinbritishcolumbia.htm>
- Cooke, Steven J. & Ian G. Cowx. (2004). "*The Role of Recreational Fishing in Global Fish Crises*". Retrieved March 2009, from [http://www.bioone.org/doi/abs/10.1641/0006-3568\(2004\)054%5B0857:TRORFI%5D2.0.CO%3B2](http://www.bioone.org/doi/abs/10.1641/0006-3568(2004)054%5B0857:TRORFI%5D2.0.CO%3B2)
- Corriveau, Jerry. (2009.April). Telephone Interview with Corriviau. Fisheries and Ocean Canada.
- Crockett, Bob. (2008, April). Visiting Professor SFU/Project Supervisor.
- CTV British Columbia. (2009). "*Salmon farming spawns B.C. First Nation suit*". Retrieved March 2009, from http://www.ctvbc.ctv.ca/servlet/an/local/CTVNews/20090203/BC_salmon_lawsuit_090203/20090203?hub=BritishColumbia
- David Suzuki Foundation. (2009). "*Sustainable Fisheries*". Retrieved March 2009, from http://www.davidsuzuki.org/Oceans/Sust_fisheries/
- Department of Fish and Game. "*Marine; New additions to this site*". Retrieved March 2009, from <http://www.dfg.ca.gov/marine/>

- Dickson, Doug. (2009.April). Telephone and Face to Face interview with Dickson. Smart Net Systems LTD.
- Doyle, Alister. (2009, February). Reuters UK. *"Fish Seen Shifting 125 miles by 2050 due to warming"*. Retrieved March 2009, from <http://uk.reuters.com/article/environmentNews/idUKTRE51B78K20090212?pageNumber=1&virtualBrandChannel=0>
- Ecoplant International, inc. (2008). *"Global Assessment of Closed System Aquaculture"*. Retrieved March 2009, from https://connect.sfu.ca/service/home/~/ClosedSystemAqua-FINAL.pdf?auth=co&loc=en_CA&id=8243&part=2
- Eng, Harwiv. (2009). Telephone Interview with Eng at Fisheries and Ocean Canada.
- Euromonitor International. (2008). Canada Country Profile.
- Euromonitor International. (2009). USA Country Profile.
- Fisheries and Aquaculture Licensing and Compliance Branch Ministry of Agriculture and Lands, and Conservation Officer Service, South Coast Environmental Protection, Vancouver Island Ministry of Environment. (2007). Joint report of Ministry of Agriculture and Lands, and Ministry of Environment. *"Regulatory Compliance of British Columbia's Marine Finfish Aquaculture Facilities"*. Retrieved March 2009, from http://www.agf.gov.bc.ca/fisheries/aqua_report/2007/aquaculture_inspect2007.pdf
- Fisheries and Ocean Canada. *"Aboriginal Fisheries Strategy (AFS)"*. Retrieved March 2009, from http://www.pac.dfo-mpo.gc.ca/tapd/afs_e.htm
- Fisheries and Ocean Canada. (2005. March) *"Canadian Seafood Exports Reach \$4.5 billion in 2004"*. Retrieved March 2009, from <http://www.dfo-mpo.gc.ca/media/npresscommunique/2005/hq-ac09-eng.htm>
- Fisheries and Ocean Canada. *"Closed Containment Technology for Salmon Aquaculture"*. Retrieved March 2009, from <http://www.dfo-mpo.gc.ca/aquaculture/innovation-eng.htm#n2>
- Fisheries and Ocean Canada. *"Commercial Fisheries"*. Retrieved March 2009, from <http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/comm/index-eng.htm>
- Fisheries and Ocean Canada. (2006). *"Commercial Licence status report – Pacific Region"*.
- Fisheries and Ocean Canada. (2006). Environics Research Group – Public Opinion Survey. *"Overfishing and International Fisheries and Oceans Governance"*. Retrieved March 2009, from <http://www.dfo-mpo.gc.ca/por-rop/overfishing-surpeche/por-rop200606-eng.htm>

- Fisheries and Ocean Canada. "Escapement updates". Retrieved March, from <http://www.pac.dfo-mpo.gc.ca/fraserriver/escapeupdate.htm>
- Fisheries and Ocean Canada. "Finfish". Retrieved March 2009, from <http://www.dfo-mpo.gc.ca/aquaculture/finfish-poisson-eng.htm>
- Fisheries and Ocean Canada. "Fisheries in the Pacific Region". Retrieved March 2009, from <http://www.pac.dfo-mpo.gc.ca/fm-gp/index-eng.htm>
- Fisheries and Ocean Canada. "Myths and Realities about Salmon Farming". Retrieved March 2009, from <http://www.dfo-mpo.gc.ca/media/back-fiche/2005/salmon-eng.htm>
- Fisheries and Ocean Canada. Overfishing. Retrieved February 2009, from http://www.dfo-mpo.gc.ca/overfishing-surpeche/media/bk_pacificsal_e.htm
- Fisheries and Ocean Canada. (2009) "Pacific Region Stats". Retrieved May 2009, from http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/licence-permis/Stats/YTD_March2009.pdf
- Fisheries and Ocean Canada. "Recreational Fishing Regulations". Retrieved March 2009, from <http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/rec/regs-eng.htm>
- Fisheries and Ocean Canada. (2006). Summary Report - 2006 DFO Baseline Opinion - Survey of Coastal, Northern, Freshwater and Inland Residents in Canada. "Attitudes toward fish farming". Retrieved March 2009, from http://www.dfo-mpo.gc.ca/por-rop/por-rop_318-05/por-rop20060608-eng.htm#14
- Fisheries and Ocean Canada. "Sustainable Aquaculture Development". Retrieved March 2009, from <http://www.dfo-mpo.gc.ca/aquaculture/sustainable-durable/sustainable-durable-eng.htm>
- Food and Agriculture organization of the United Nations. "Fisheries and Aquaculture department". Retrieved April 2009, from <http://www.fao.org/fi/glossary/default.asp>
- George, Gary. (April, 2009). Face to Face Interview with George. First Nations Student Life Coordinator at SFU.
- Going Global. (2008). "Going Global Career & Employment Resource Guide for Canada." Retrieved March 2009, from Euromonitor International.
- Going Global (2008). "Going Global Career & Employment Resource Guide for USA." Retrieved March 2009, from Euromonitor International.
- Government of Canada. Taxes and GST. Retrieved March 2009, from <http://www.canadabusiness.ca/gol/cbec/site.nsf/en/index.html>

- Governor General Canada. Governor General. (2009) Retrieved March 2009, from http://www.gg.ca/gg/index_e.asp
- Greenpeace Canada. "Aquaculture". Retrieved March 2009, <http://www.greenpeace.org/canada/en/campaigns/oceans/threats/aquaculture>
- Greenpeace Canada. (2004). "Bottom Trawling Fact Sheet". Retrieved April 2009, from <http://www.greenpeace.org/raw/content/canada/en/documents-and-links/publications/bottom-trawling-factsheet-2.pdf>
- Grooms, Michelle. (2009, April). Telephone Interview with Grooms at Oregon Department of fish and wildlife.
- Grydeland, Odd. (2009). Fish Farming Xpert. "Natives Suing BC Government Over Fish Farms". Retrieved March 2009, from http://www.fishfarmingxpert.com/index.php?article_id=83933&page_id=76
- Gutierrez, Carlos M., Conrad C. Lautenbacher & William T. Hogarth (2007). U.S Department of Commerce & National Oceanic and Atmospheric Administration (NOAA). "NOAA 10-year plan for Marine Aquaculture". Retrieved March 2009, from <http://aquaculture.noaa.gov/pdf/finalnoaa10yrrweb.pdf>
- Hall, David. (2009, April). Telephone Interview with Hall. Cards Aquaculture.
- Hecht, Jeff, & Gaia Vince. (2004). New Scientist. "Recreational Fishing Harms Threatened Species".
- Heisdorf, Marc (2009, April). Conversation with Heisdorf, Associate Marine Biologist at the California Department of Fish and Game.
- Hodson, Jeff. (2009, May). Metro – The World's Largest Global Newspaper. "Tree-Peat. Campbell, Liberals take reins for third term".
- Innovation Norway. (2009, March). *Free Trade Agreement between Canada and EFTA*". Retrieved April 2009, from <http://www.innovasjon Norge.no/Internasjonale-markeder/Kontorer-i-utlandet/Canada/Nyheter/Free-Trade-Agreement-between-Canada-and-EFTA/>
- James, Carol. (2009) Campbell Continues to Stall on Agriculture Progress <http://www.bcndp.ca/newsroom/campbell-continues-stall-aquaculture-progress>
- Kaufmann, Ivo. EFTA. "EFTA Free Trade Agreements". Retrieved April 2009, from <http://www.efta.int/content/free-trade/fta-countries>
- King, Sarah. (2009, April). Face to Face Interview with King. Greenpeace Canada. Ocean

Campaigner.

Kotler, P., Keller, K. L., & Cunningham, P. H. (2006). *Marketing Management Canadian 12th Edition*. Pearson Education International. Page(s): 342, 343.

Laine Welch (2007). Sit News – Stories in the news. “*Big Push to expand aquaculture*”. Retrieved February 2009, from http://www.sitnews.us/LaineWelch/042107_fish_factor.html

Living Oceans. “*What’s Caught in Canada’s Pacific Waters*”. Retrieved March 2009, from http://www.livingoceans.org/programs/sustainable_fisheries/catch/

Living Oceans. “*Salmon Farms*”. Retrieved March 2009, from <http://www.livingoceans.org/programs/fishfarms/default.aspx>

Løvold, Irene. (2009, February). Telephone Interview with Løvold at Amatec.

Marine Aquaculture Task Force (2007). “*Sustainable marine aquaculture: Fulfilling the promise; managing the risks*”. Retrieved March 2009, from <http://aquaculture.noaa.gov/pdf/finalnoaa10yrrweb.pdf>

Marine Harvest. (2009). Corporate Responsibility. “*First Nations Chief Visit Norway*”. Retrieved March 2009, from <http://www.marineharvest.com/en/Corporate-responsibility/Qmarine-in-practise/Developing-cooperation-with-First-Nations-in-Canada/>

Miller, Jon. (2006). Marketo – Modern B2B Marketing Blog. “*Benchmarking marketing budget*”. Retrieved April 2009, from http://blog.marketo.com/blog/2006/10/benchmarking_ma.html

Mo, Sigurd. (2009). Conversation with Mo from Amatec in Norway.

Nakashima, Kris. (2009.March). Face to Face Interview with Nakashima. Pacific Net & Twine LTD.

National Golf Foundation. Retrieved April 2009, from <http://www.ngf.org/cgi/home.asp>

National Oceanic and Atmospheric Administration (NOAA) under the U.S Department of Commerce. “*Fisheries*”. Retrieved February 2009, from <http://www.noaa.gov/fisheries.html>

National Oceanic and Atmospheric Administration (NOAA) under the U.S Department of Commerce. “*About National Marine Fisheries Service*”. Retrieved February 2009, from <http://www.nmfs.noaa.gov/aboutus.htm>

National Oceanic and Atmospheric Administration (NOAA). (2008). “*NOAA’s Fisheries Service*

- Releases Disaster Aid to West Coast Salmon Fishing Industry*". Retrieved March 2009, from http://www.nwr.noaa.gov/Newsroom/Archives/2008/upload/09_17_2008.pdf
- Netting Machinery. (2007). Retrieved April 2009, from <http://nettingmachinery.com/>
- NOAA Aquaculture Program. *"Aquaculture in the United States"*. Retrieved March 2009, from <http://aquaculture.noaa.gov/us/welcome.html>
- Online, Kevin. (2009, April) Telephone and Face to Face interview with Onclin. Wavemaster.
- Oregon Department of Fish & Wildlife. *"Mission Statement"*. Retrieved March 2009, from <http://www.dfw.state.or.us/agency/>
- Pacific Fishery Management Council. (2009). *"Review of 2008 Ocean Salmon Fisheries"*. Retrieved March 2009, from http://www.pcouncil.org/salmon/salsafe08/chpIV_08.pdf
- Paulson, Tom. (2007). Seattlepi *"Fish Farming Still a Small Industry Here"*. Retrieved March 2009, from http://www.seattlepi.com/local/314892_farms09.html
- Pelozo, John. (2009). Referring to Class Discussion – Advertising & Promotion. Simon Fraser University
- Quadra Pacific Netloft Ltd. Company Profile. Retrieved April 2009, from <http://www.qpfishnets.com/>
- Rhett A. Butler. (2007). Mongabay.com *"In Alaska, fishing industry drives marine conservation"*. Retrieved February 2009, from http://news.mongabay.com/2007/0724-interview_benton.html
- Riksheim, Lars Einar. (2009, February). Telephone Interview with Riksheim at Amatec.
- State of Alaska Department of Fish and Game. (2009). *"2006 calendar year license sale statistics. Administrative Services, License Statistics."* Retrieved May 2009, from <http://www.admin.adfg.state.ak.us/admin/license/2006info.pdf>
- Senichenko, Geoff. (April, 2009). Telephone Interview with Senichenko. Western Canada Wilderness Committee of Canada.
- Solberg, C. A. (2006). *Internasjonal Markedsføring* (7 ed.). Oslo, Norway: Universitetsforlaget. Page(s):32.
- Stedman, Carl (2009, April). Interview with Stedmann at Washington Department of Fish and Wildlife.
- Tank, Suzanne. (2004). The David Suzuki Foundation. Seas of Change. *"Ten*

Recommendations for Sustainable Fisheries on the B.C. Coast". Retrieved March 2009, from <http://www.davidsuzuki.org/files/Oceans/DSF-SeasofChange1.pdf>

Tax Tips. (2009). Canadian Tax and Financial Information. *"What is BC PST"*. Retrieved April 2009, from <http://www.taxtips.ca/bcpst/whatisbcpst.htm>

The Tye. (2009). *"Natives Face Salmon Food Shortage"*. Retrieved May 2009, from <http://thetye.ca/News/2008/05/21/SalmonShortage/>

Tom Paulson (2007). *"Fish farming still a small industry here - effect on wild salmon is a key concern"* Retrieved March 2009, from http://www.seattlepi.com/local/314892_farms09.html

U.S Department of Commerce. (2006). *"Fisheries Economics of the U.S. Economics and Sociocultural Status and Trends Series"*. Retrieved February 2009, from http://www.st.nmfs.noaa.gov/st5/publication/economics_communities.html

Walter, Rob. (2009, April) Face to Face Interview with Walter. AgriMarine Fish Farm.

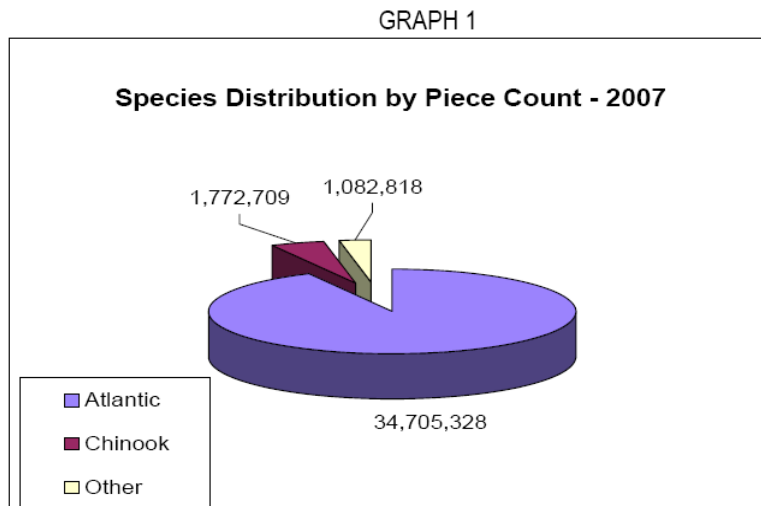
Washington Department of Fish & Wildlife. *"About WDFD"*. Retrieved March 2009, from <http://wdfw.wa.gov/about/>

World Trade Organization (2008, April). *"Developing, Transition Economies Cushion Trade Slow Down"*. Retrieved March 2009, from http://www.wto.org/english/news_e/pres08_e/pr520_e.htm

Appendices

Appendix 1

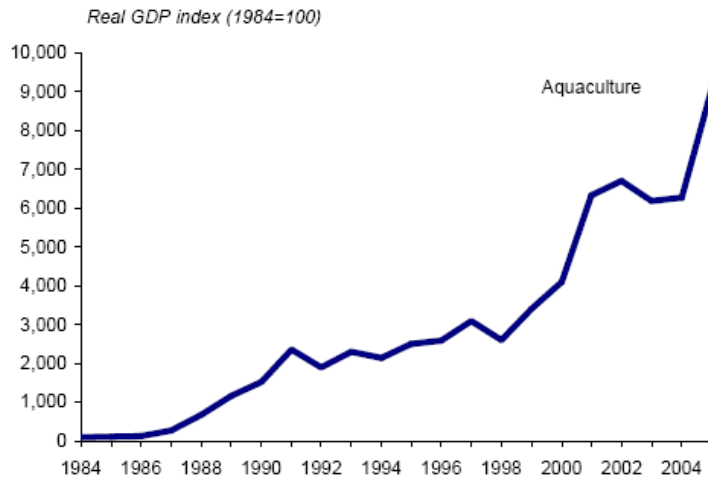
Species Distribution British Columbia



(Fisheries and Aquaculture Licensing and Compliance Branch Ministry of Agriculture and Lands, 2007).

Appendix 2

Strong growth in BC's aquaculture industry continues to boost the sector's overall performance



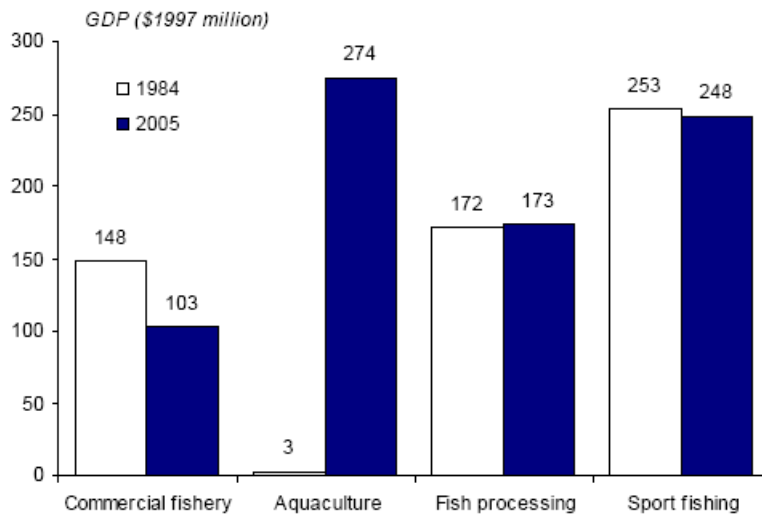
Source: Statistics Canada and BC Stats
Figure 3

(BC Stats)

Appendix 3

Aquaculture now the largest industry in the sector

The aquaculture industry has seen strong growth since 1984, but other industries have not fared as well



Source: BC Stats
Figure 7

(BC stats)

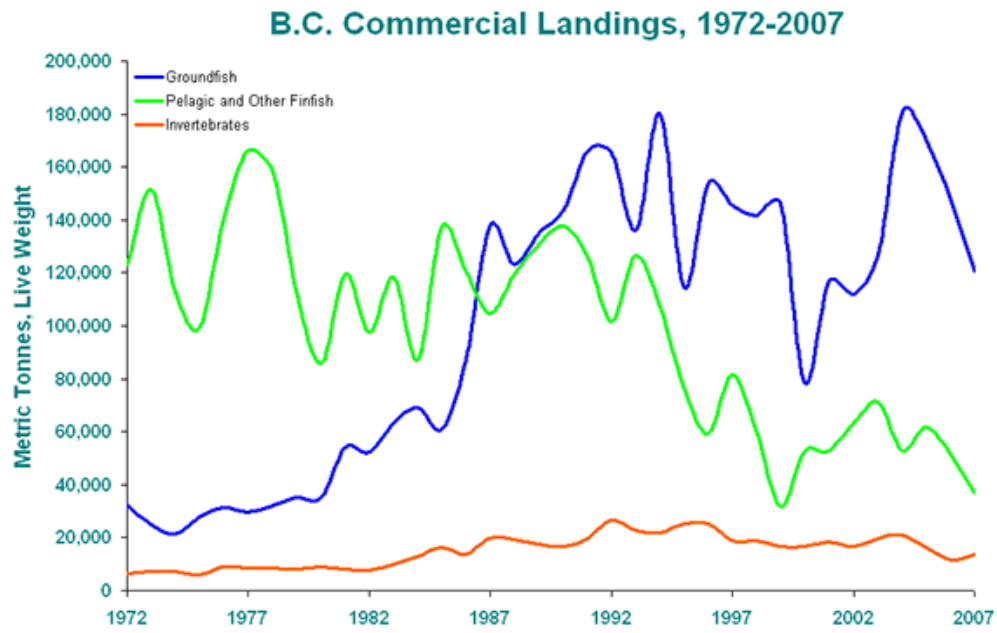
Appendix 4

Salmon Farm Sites BC



(Living Oceans Society, 2009)

Appendix 5



(Living Oceans Society, 2009)

Appendix 6

Netting Suppliers in B.C. and U.S.

Company name	Address	Contact Info	Web site
Campbell River Netloft Ltd	4225 Midport Road PO Box 197 Campbell River, BC V9W 5A7, Canada	Phone: 1- 250-286-3249	N/A
Quadra Pacific Netloft Ltd	1364 Spruce Street, Campbell River, BC V9W 3L7, Canada	Phone: 1-250 286 6007	http://www.qpfishnets.com/
Wavemaster Canada Ltd	4266 Middle point Dr, Campbell river BC	Phone: 1- 1-250 830 0100	N/A
Smart Net Systems	530 Kinniklinik way Comox BC Vancouver Island	Phone: 1-250 890 0841	http://www.smart-net-systems.com/marine/shrimp_trawl.html
Cards Aquaculture	British Columbia: Operations Manager, 8300 Bing Road. PO Box 2399 Port Hardy, British Columbia B0N 2P0	Phone: 1-250-949-2380	http://www.cardsaqua.com/examples/ex3/index.php
Redden Net Ltd	Campbell River, BC V9H1A1- Canada	Phone: -1-250-286-8303	N/A
Pacific Net and Twine Ltd	3731 Moncton St Richmond, BC, V7E 3A5	Phone: 1-604-274-7238	N/A
NIKKA Fishing & Marine	3551 Moncton Street Richmond, BC Canada V7E 3A3	Phone: 1-604-271-6332	N/A
Towns Netting and	3531 Bayview St. Richmond, BC, V7E	Phone: 1-604-277-3191	http://www.townsmarine.com/

Marine Supplies Ltd	5W3		
NET Systems Inc	7910 NE Day Road West Bainbridge Island, WA 98110, USA	Phone: 1-206-842-5623	http://www.net-sys.com/
Pacific Netting Product Inc	25993 United Road NE Kingston, WA 98346 USA	1-360-297-0858	http://www.pacificnettingproducts.com/

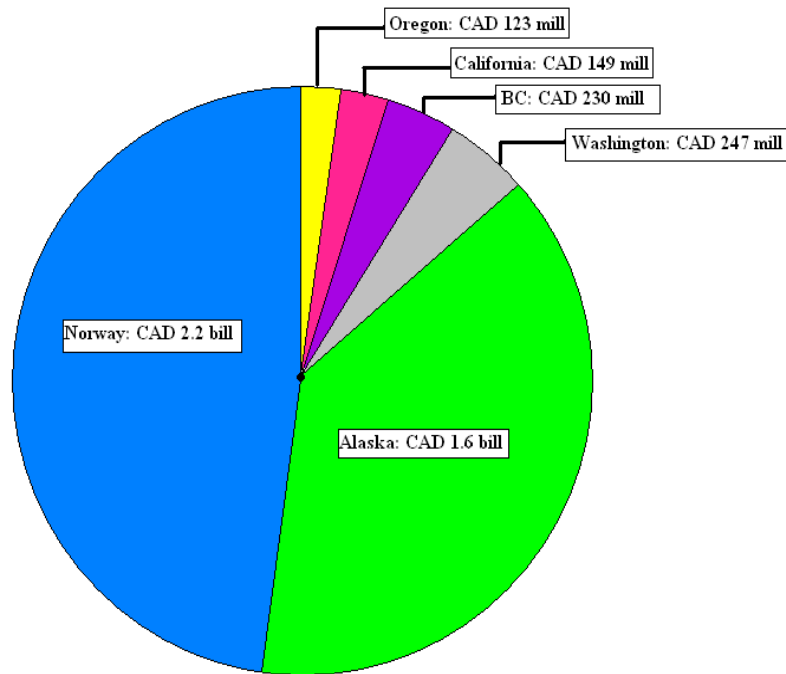
Appendix 7

Commercial Fishing Industry (ex-vessel value)		
Country/State	Value (CAD)	%
Norway	2.200.000.000	48
British Columbia	230.000.000	5
Washington	247.000.000	5.5
California	149.000.000	3.3
Oregon	123.000.000	2.8
Alaska	1.600.000.000	35
Total	4.549.000.000	100

<http://www.fiskeridir.no/fiskeridir/fiske-og-fangst/statistikk/fangst-og-kvoter/norges-fiskerier>

Appendix 8

Value of commercial fishing in Norway compared to the Pacific West Coast



Appendix 9

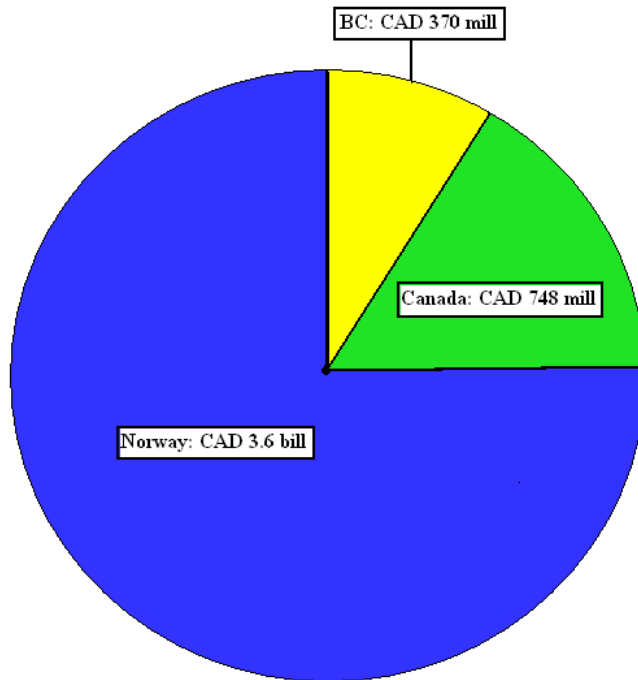
Value of Aquaculture		
Country/Province	Value CAD	%
Norway	3.600.000.000	76
Canada	748.000.000	16
British Columbia	370.000.000	8
Total	4.718.000.000	100

Norway: (<http://akvafakta.fhl.no/category.php?categoryID=61>)

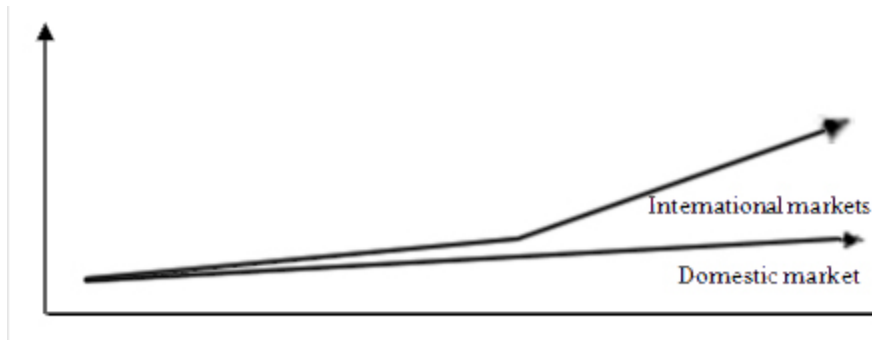
Canada: (<http://www.aquaculture.ca/files/production-markets.php>)

Appendix 10

Value of aquaculture in Norway compared to B.C. and Canada



Appendix 11



	Trial Export	Extensive Export	Intensive export	Multinational marketing	Global marketing
Export motive	Operational	Operational	Strategic \ operational	Mainly strategic	Mainly strategic
Market selection	Neighboring countries – random selection	Multiple markets	Market concentration	Market expansion	Consolidation within Triad
Market share	Invincible	Insignificant	Increasing	Large and specific markets	Large and in key markets
Organization	"One man show" – part time Distributor	"One man show" – full time Distributor	Export department Agents	International division Sales office	Global or transnational organization Sales office
Entry strategy	Export house "Piggy back"	Agents	Sales office in main markets	Licensing Production	Production Alliances
Marketing mix	Product adaptation Limited promotion. Low price.	Product adaptation Some promotion. Low price.	Cultural adaptation Product advertisement Moderate price	Cultural adaptation Profile building High price	Global products and promotion and international PR
Financial results	Marginal or negative	Marginal or negative	Positive contribution	Mutual dependency of the domestic market	Price leader Main source of income.

(Solberg, 2006) "The Bakka Model"

Appendix 12

Table 2.1 SWOT-Analysis

SWOT Analysis		
Strengths	Importance	Competence
1 More powerful and robust machines	4	5
2 Better winder	4	5
3 Customized machines	5	5
4 Long term relationship with customers	3	5
5 Large spare facility	2	4
6 International operations	3	4
7 Big existing customers	1	3
8 Awareness of Amatec in the Pacific West Coast	2	2
9 A good reputation of quality and reliability	4	4
10 Increasing market share	3	4
Weaknesses	Importance	Competence
11 Distance to Pacific West Coast Market	4	3
12 Company organization	3	3
13 Fragmented customer base	2	2
14 Trade agreements with USA	1	1
Opportunities	Attractiveness	Probability
15 Selling to secondary markets	Medium +	Medium
16 Switching from by hand sewing to machine	High	Medium +
17 Norwegian fish farmers familiar with Amatec	Medium	Medium
18 Product superiority	Medium +	Medium
19 Increasing aquaculture industry	Medium +	High
20 Buyers will have high costs of switching suppliers	High	Medium +
21 Demand increase for fish	High	Medium +
Threats	Seriousness	Probability
22 Lawsuits – Impact	Medium	Medium
23 Requirement of technological upgrade to aquaculture	High	Low
24 Diminishing market for commercial fisheries and aquaculture	High	Medium +
25 Union Special uses bargaining power to pressure Amatec	Medium +	Medium
26 European competitors "piggyback" into Pacific West Coast	Medium -	Medium +
27 First Nations influence power	Medium -	Medium
28 Cheap hand sewn nets from Asia/south America	Medium +	Medium

Appendix 13

Figure 2.1, 2.2 and 2.3 Competence-, Opportunity- and Threat-Matrix

Figure 2.1 Competence Matrix

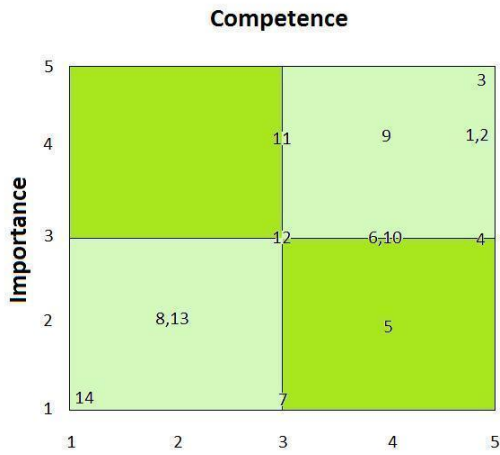


Figure 2.2 Opportunity Matrix

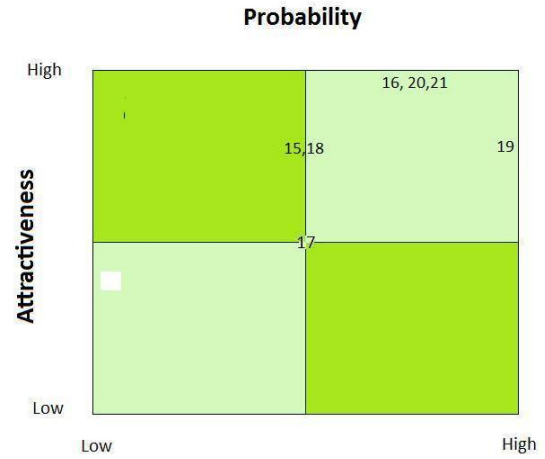
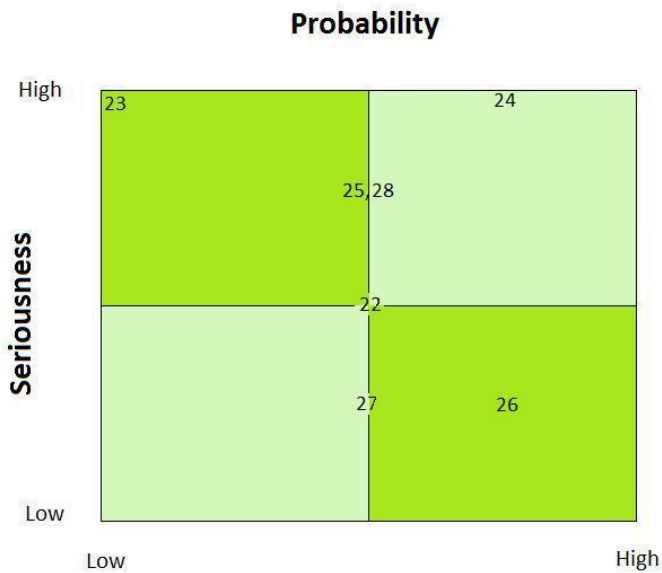


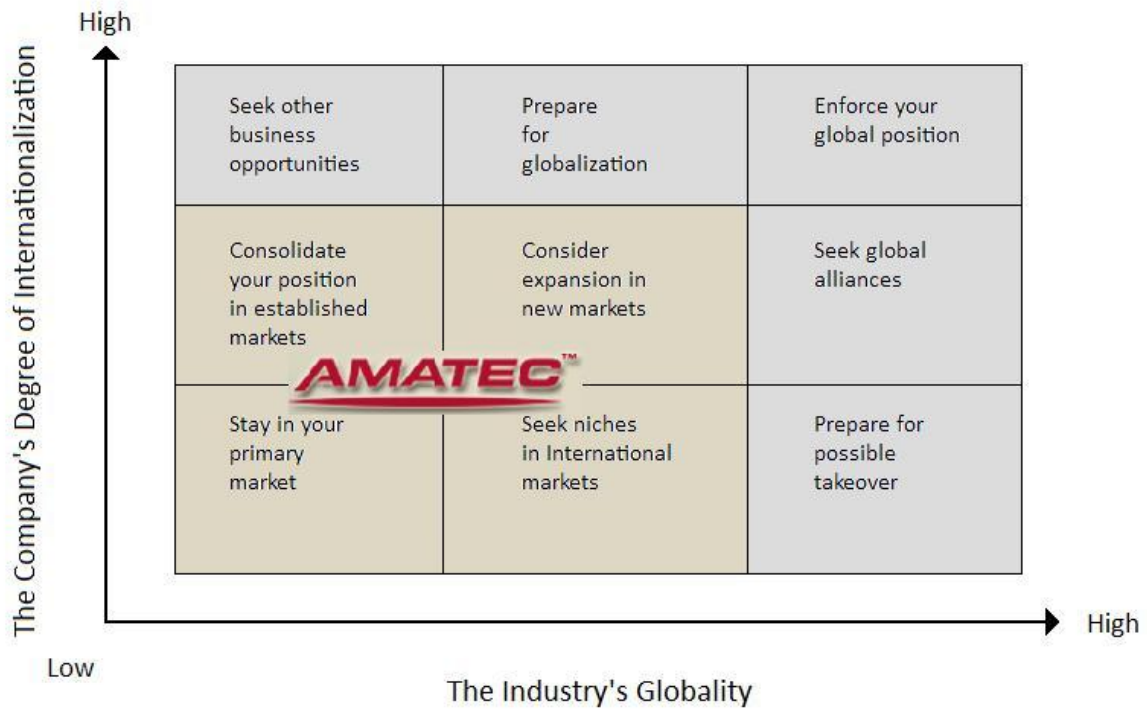
Figure 2.3 Threat Matrix



These matrixes are based on the SWOT-Analysis and are tools for prioritizing competence, opportunities and threats.

Appendix 14

Figure 2.5 Nine Strategic Windows



(Solberg, 2006)

Appendix 15

Figure 2.6 Porter's generic strategies

Target Scope	Advantage	
	<i>Low Cost</i>	<i>Product Uniqueness</i>
Broad (Industry Wide)	Cost Leadership Strategy	Differentiation Strategy
Narrow (Market Segment)	Focus Strategy (low cost)	Focus Strategy (Differentiation)

<http://www.quickmba.com/strategy/generic.shtml>

Appendix 16

Product Estimate

Product Estimate per machine with use of an agent

	TR1	AM302	AM402
Sales Price	19430	30151	23524
Company's Revenue (70%)	13601	21105,7	16466,8
Product production cost	5829	9045,3	7057,2
Sales Price	19430	30151	23524
Sales provision (20%)*	3886	6030,2	4704,8
Product Production cost	5829	9045,3	7057,2
Company's Gross Margin per machine	9715	15075,5	11762

** Provision 20% of sales price*

All amounts are in CAD

Appendix 17

Product Estimate

Product Estimate per machine without the use of an agent

	TR1	AM302	AM402
Sales Price	19430	30151	23524
Company's Revenue (70%)	13601	21105,7	16466,8
Product production cost	5829	9045,3	7057,2
Sales Price	19430	30151	23524
Product Production cost	5829	9045,3	7057,2
Company's Gross Margin per machine	13601	21105,7	16466,8

All amounts are in CAD

Appendix 18

Revenue Projection by Demand Estimation**						
	TR1	AM302	AM402	Additional Products	Training***	Sum
Market Potential	106865	165830.5	129382	100519.375	9999	512595.9
Market Forecast	38860	0	0	9715	3636	52211
Market Minimum	19430	0	0	4857.5	1818	26105.5

***Based on the gross margin profit*

****Amatec charges 909 CAD (exchange rate 1 CAD = 5,5 NOK) for Customer Training Session to all new customers in addition to travel and lodging expenses (Amatec, 2009)*

Interview Appendices

Telephone Interview with David Hall – Cards Aquaculture

We understand you sell many different types of fish nets, but what kind of nets for aquaculture and fisheries do you sell?

We sell mostly to fish farms. 95 % of our customers are fish farms as they are the ones with the money. The commercial fishing industry is declining.

Do you join the nets yourself by hand or do you use machines? Who do you buy them from?

We buy them customized directly from the manufacturer to fit the customer, so we do not need to join them ourselves. This is becoming a trend in B.C. right now, because it is cheaper.

Is selling fish nets a profitable industry right now?

It is profitable as long as you do it right. Most of our profits stem from the services we provide, not just the fish nets.

Who are your competitors?

The competition is becoming global. Our competitors are mostly Norwegian, Scottish and Chilean fish net suppliers.

What do you consider to be the biggest threat in the fish net industry today?

The biggest threat is the quota system in the commercial fishing industry. Even though aquaculture is not expanding much right now, it is still a stable industry.

Interview with Sarah King – Oceans Campaigner, Greenpeace Canada

What are Greenpeace Canada's views on Aquaculture?

Aquaculture, as it is currently practiced, is not the answer to depleted wild fish stocks. The increasing global aquaculture industry is threatening marine and freshwater ecosystems and undermining food security across the planet.

Greenpeace Canada has opposed open net fish farming for decades, and is working for a halt on new site approvals and a transfer of all open net fish farming to closed containment systems within Canadian waters.

What are the main problems regarding Aquaculture?

Diseases and parasites can be particularly problematic in fish farming where stocking densities are high. Wild populations of fish passing near the farms may also be affected. The sea lice are one of our biggest concerns, in addition to the transport and dumping of the infected dead fish. We are also worried about the effect on other stocks that are being used as feed. E.g. it takes about 3 tons of sardines to produce 1 ton of farmed salmon.

Where does Greenpeace Canada stand in this debate?

As mentioned, our main goal is to remove all fish farms in Canada, but because of the high demand for fish in the world right now and the shortage of wild fishing, we don't see this happen in the near future. We are therefore currently working on promoting closed containment systems instead of the open net systems that are currently practiced. We know about one such closed containment farm on Vancouver Island to which we have showed our support.

Do you know if there is a similar conflict in the U.S.?

I know there are different issues concerning overfishing and sustainability that have been debated in the U.S., but I don't think the issues are the same as in Canada because they don't have as much fish farming as we have. From what I know, their environmental debates have been more focused on the pollution on the east coast.

Do you see any future for aquaculture in BC?

Unfortunately I think fish farming will keep increasing in the coming years.

Greenpeace Canada believes that closed containment operations, shellfish aquaculture and industrial fisheries can only be sustainable if a truly ecosystem-based management approach is taken. That said, if we can enforce production of fish to be more environmentally friendly, I don't think the future looks too bad.

Telephone Interview with Jerry Corriveau – Fisheries and Oceans Canada

How does the future look for B.C. fish farms? Do you believe the industry will grow?

There has not been much expansion lately because the pressure from environmental groups is massive. But I am optimistic; I believe there is a future for fish farms in British Columbia. The different types of fish farming we have here in B.C. are Sable fish and Atlantic salmon, Sable fish is of higher value, because you get more for the fish.

How do you give out licenses?

They are issued by the province. Alexander Morton sued the government and the fish farming industry; he wants the fish farming to be regulated by the federal government. Marine Harvest appealed the court case, so the outcome will be known in about a years' time.

Do you think land based aquaculture will be an option in the future?

It will only be an option for high value species like sable fish, because they sell for much more. There are studies going on about land based fish farms, so we do not know yet. The only thing we know is that it will be very expensive and it takes a lot of electricity and power. It will also create more pollution than traditional fish farms.

Why do fish farmers in B.C. farm Atlantic salmon instead of Pacific salmon?

The fish farmers farm Atlantic salmon because they have been farmed for a long time and we know more about this type of fish. It is also easier to farm because we also know about disease prevention in regards to Atlantic salmon. However, B.C. farmers do not only farm Atlantic salmon, there are Pacific salmons, other types of finfish and also a little bit of shell fish.

We have talked to both players in the commercial industry and in the aquaculture industry, and they both blame the government for the slow progress in the fishing industry, why do you think that is?

It is always the governments fault; it is so easy to blame us. We have to balance the needs of different players; environmental organizations, commercial fishing industry, First Nations etc. No industry really wants to be regulated.

What do you think needs to be done in order to make aquaculture in B.C. more acceptable by First Nations, environmental organizations and commercial fishermen?

You have to have a social license, in other words, an acceptance by the public, which only comes with time and education. There are projects going on regarding IMPA, where fish farmers have different fish in one fish farm. For instance, salmon in one cage with a net on top, and then a different type of fish underneath to eat the waste from the salmon, and then shell fish or sea cucumbers on the bottom to eat the rest of the waste. In this way, one can farm many types of species and also get rid of the waste. This is a holistic approach to fish farming, but it takes time. Steve Cross is a proponent of this type of fish farming.

Is there a lot of fish farming on the West Coast of the U.S.?

They have a lot of shell fish farms, but not much for fin fish. Alaska has banned fish farming, because of the pressure from environmental organizations. Each state has its own regulation and rules on the fishing industry and fish farming.

Interview with Kris Nakashima – Pacific Net & Twine Ltd

Do you import the fish nets you sell in your store?

We import most of the nets from Japan, and some from Taiwan.

Is that the most common Countries to import from?

Japan is the most common, they have the highest quality nets. The second highest quality regarding nets comes from Thailand or Mexico.

Do you import the nets because it is cheaper?

The netting in general is cheaper from Asia. The quality is not that good, however there seems to be a big customer base for it anyways.

Would you say that the fishnet industry is profitable right now?

As a distributor, if you were just to concentrate on fishing alone -I would say no. It would probably go under pretty quick. It has been a declining industry for the last ten to fifteen years.

What about the future prospects?

Unless things change, and we still lack help from the government, it is going to get worse.

So what changes would the fishing industry need?

Fewer fish farms, because they harm the environment.

Do you sell nets to fish farms?

The nets they use are very different. They do not use gillnet. They use pens and they buy them elsewhere. We do not specifically sell them.

Do you know who they buy them from?

Mostly from Redden Net. They have a net shop in Coquitlam that does custom netting. Hatcheries are ok. They help produce more stocks. Fish farms on the other hand, they kill fish and they are almost like a chicken farm where they produce just for food. The problem with the fish farms is the damage they are doing to the waters and to the wild stocks. It is pretty bad.

Is that why you think it is not a profitable industry for the nets, because fewer people do wild fishing?

For us it has less to do with the actual fish farms themselves. It is more the fact that the government has restricted the fishermen to the point where in the last 3 years we have not had a fishery opening in the Fraser River for Sakai Salmon. The Fraser River run for Sakai used to be one of the biggest in the world. And the commercial fishermen have not been allowed to go there to fish.

Is this because the number of fish is decreasing?

That is what they like to say, but it is not true. The returns on what have come back are bigger than people think. My dad, who is a retired fisherman, states that he has not seen numbers of fish like it is now, in at least 6 to 10 years. The fish is coming back.

What would you say if someone points out that the wild fisheries also take away a lot of the fish? The fish could decrease due to overfishing?

That is totally false.

Do you think so?

I know so; we have not been fishing, so how could we have an effect on it? Out here for example, there has been no fish market for years.

So you mean there has been no wild fishing?

No, except from native fishing.

Why are there so many fish boats here if there is no fishing activity?

Some of them, the way it works, are that they have segregated. There is gillnetting, there is trawling which is done by lines, so they are all different licensing. In those different fisheries they are again divided into areas; the Fraser River for instance is a south area. You have to purchase a license for every area you would like to fish in, so here for example, if you have a Fraser river gillnet licence and they do not open it, what can you do? You pretty much just sit there. As far the effect that we as commercial fishermen could have on the industry around the stocks, it is pretty hard to have an effect when you are not out there. And that being said, commercial fishermen they are not stupid. They are not going to overfish their livelihood. They understand conservation, and when there is not a lot of fish coming back, they understand that fishing have to be held back. The problem is that the federal government should be holding everybody back, not just the commercial fishing industry.

We have heard that most people in the Vancouver area prefer eating wild fish?

Yes, the wild fish is much better.

Is the market for the wild fish bigger, because most of the fish produced in fish farms are actually sold to the U.S.?

Yes, a lot of them are. I have seen a lot more awareness for the wild fish in B.C. for the last 5 or 6 years or so. If you asked somebody 7 years ago; what is the difference between the wild fish and farmed fish; most people would not know the difference. You can now see a distinction on the high end restaurants, they carry only wild Sakai and they specify that on their menus, because they are proud of it. So there is a distinction and a reason why you pay more for wild fish.

What do you think about land based aquaculture? Do you think that could be a possibility?

Yes if that is a possibility, I would totally support that. But I think there is a market for fish farms too, to feed the population, but it is just the way they go about it that I am opposed to.

Who are your competitors? Are you competing with the other companies in this area?

Yes, for the most part Redden Net, which has now moved. And then there is Nikka down the street.

Do you think anyone here would consider joining fishnets themselves if they had the right equipment? Like a sewing machine?

Yes people sew them together by hand, so that sounds interesting. I think it will depend on the price of the product and the size of the company.

Telephone Interview with Doug Dickson – Smart Net Systems Ltd

I understand you sell fish nets to both fish farms and the commercial fishing industry, but who is your most important customer?

I mostly sell nets to shrimp trawlers and predator netting to aquaculture.

Do you join the nets yourself? Do you do it by hand or do you use machines?

Occasionally the manufacturer customizes the net for us so that we do not have to join the nets ourselves, but due to time constraints and quality we sometimes do it ourselves. We use a machine which is bought from NC Carpet Binding from New Jersey. We know about the Italian one, but their products are more expensive.

Do you believe there is a market for such a machine in Canada?

Yes, I do. I am actually interested in one myself. I am always interested in looking for what is out there. I know that Cent Trawl Pacific has a machine. Most of the companies making fish nets for aquaculture could use one, because they have to make big nets. Further, having such machines will reduce the production time considerably. It takes about 1 ½ hours to join one net by hand, but if you have a machine it will only take you 8 minutes. In other words, you will reduce processing costs and employee costs.

Is the fish net industry profitable and is it growing?

Selling fish nets is only a small part of my company's business. I mostly sell to agriculture in the U.S. (80/90 %). However, you can use the machine to join nets for sport nets and agriculture too. That is the main reason for why I bought such a machine in the first place. However, many companies do also get them customized directly, for instance from Japan and Korea, all I have to do then is the marketing. In addition, I have limited manpower, and my company is quite small.

What do you consider is the biggest threat to the fish net industry in Canada right now?

The shrimp industry is going well, because they do not have the same restrictions as the fishing industry. You can fish more of the shrimp, and they do not have the same life cycle as finfish. Anyways, the commercial fishing industry is limited, due to habitat degradation. In the valley, almost all fish are gone, due to pesticides, sea lice, human impact etc.

In the 1970's, I went to talk to the fisheries department, because I saw what was coming in the commercial fishing industry. The fish stocks would decline if we did not stop our way of managing the harvesting, but they would not listen. Instead they tried to convince me otherwise. Look what has happened now. There was a problem with the management in commercial fishing; fishermen were not able to manage the fishing in a sustainable manner. Regulations in the industry do make sense, but only when it is practiced the right way. The Government was more interested in their pay checks than to actually solve the problems. They would try to extract money from the commercial fishermen, and a healthy fishing industry went down the drain. This will never change, whatever they do now it is too late. They used "Junk Science" when they managed the commercial fishing industry, which made the commercial fishing industry go downhill. They tried to make biology fit management practices, instead of fitting management to biology, which does not make any sense. In addition, they seem to support fish farming because it is easier to control.

Who are your competitors?

I have focused and specialised my business to a mix of many different types of nets and products, because I do not want to have “too many eggs in one basket”. Our competitors are the ones selling the same products as us, fish nets etc.

Face to Face Interview with Doug Dickson – Smart Net Systems Ltd

In the telephone interview you mentioned that you use a sewing machine to join your nets. What kind of machine is this?

I have a Union Special machine from NC Carpet Binding. It is not necessarily smaller, but maybe more limited in the fact that your machine might have more power. The one I have might also not be able to sew through the bigger sized ropes, but it depends on what kind of rope you are using. I do mostly led lines and polyester ropes. I was not aware that there was a machine made in Norway, although it certainly makes sense because that is where the head quarter for fish farming is.

Do you know anyone else who sell this kind of machines?

Yes, there is an Italian company, Buraschi, and after talking to a Japanese company that was using this Italian machine, they told me that they also knew about one located in New Jersey.

What do you do with your machine if it breaks? Do they come here to fix it for you?

No, I have to wrap it up and send it to them. I have tried to take it apart myself to try to figure out what was wrong.

When did you buy this machine?

Last spring, 1 year ago.

Do you know how long the machines are supposed to last?

I do not know, but I guess it is a lifetime machine. You would probably have to get components for it to make it last for such a long time.

Do you buy the parts from the New Jersey Company?

Yes, I give them a call when I need parts and they send them to me, so the service is pretty good. The only thing I criticise them for is that I would like to have a manual so I can do some of the repairs myself, which would be easier because they are too far away. You have to be able to do some of these small repairs yourself, especially if you are in the middle of some decent sized project.

Do you think it will be quicker to use the machine?

With a machine you can shorten the production time from 1.5 hour to 7 or 8 minutes. That would save me from bringing in people to help me with big orders.

Is the shrimp industry declining?

Yes, we hardly even have a fishery here anymore. There were bycatch issues because many people were being irresponsible. They have not solved any of the bycatch issues, but a lot of stuff is happening to perpetuate the management. People are securing their jobs, so they have to justify their existence.

I am a real believer in management, you have to have it. However, I believe in management that makes sense. I have seen so many unbelievably flaws in what they have been doing. There were issues of over licensing and mixed stocks fisheries, which was a big problem. The enhancement practices that they were using were not done at an equal basis. They were enhancing two species and they were ignoring the fact that these fish really need somewhere to live when they come home to spawn.

Do think the Aquaculture industry in the U.S. will expand in the future?

Well, I think that a whole generation must die before the opinions about fish farming will change. There is not much fish farming in the U.S. right now as far as I am concerned.

Do you know which industry require most nets?

The amount of netting that the fish farms use is huge. For instance, I provided three containers of predator netting to these guys some years ago.

Do you use this machine for agriculture nettings to?

I do not use it for agriculture, because there is no call for rope orders. This machine is specifically set up to join the rope to the net. Most agriculture nettings do not have a rope,

so that is why it is not necessary to use a machine for those nets. These nets are mostly light weight and can be made with a household machine. I do not know how variable those machines are or what kind of applications you can use on it.

Do you use the machine for predator netting as well?

Yes, I use the machine for everything that we use a rope on.

We talked to fishermen to hear if they used a similar product to this machine, but it seems like most of them join them by hand. Do you think this is because they do not know about the machine or just because it is more convenient to not use it?

Fishermen, even if they are of high volume, cannot justify such an expense.

What about ginseng, do you know if they use netting for that?

They only use shade cloths for ginseng which can easily be sewn on a household machine. There is no need for an advanced machine for these nets.

I know that you sell golf nets. How much does a golf net cost?

Well, for an average golf course driving rank, we charge 40 cents a square foot. It is difficult for me to give you an exact price because we are building them exactly to the customer's specifications and all the nets are different.

Do you repair the nets too?

Yes I do some repairs here. The shrimp trawlers are bringing in their nets, but this is minimal though. I try to make the nets as strong as possible so there will be minimal need for repair. Some of the guys have their nets for about 10 years.

Face to Face Interview with Gary George – First Nations Student Life Coordinator, Simon Fraser University

What can you tell us about First Nations and fishing?

Well, there is a political and social side to it. It is really a unique situation. Ever since 1663 there has been a royal proclamation which allowed First Nations to fish and hunt. Later,

there was the BNA act and the fisheries act. First Nations also live where they are born, because that is “where they belong”, and many use fishing as a livelihood. In fact, I have studied First Nations fishing and wrote a paper about it.

What do First Nations think about commercial fishing?

There are mixed views on it and different types of fishing. In fact I used to be a fisher man, so I know a lot. Nearly every First Nations fish in the river, with smaller boats, whereas the commercial fishermen fish in the ocean. Actually, the fish in the ocean tastes better than the fish in the river, because the fish in the river do not get as much of the same algae as the ocean fish. However, commercial fishing has come to a point where there will be no fisheries left due to the declining fish stocks. In fact, I come from a place near Prince Rupert, which used to be a town where everybody lived off the fishing. Nonetheless, there are almost no fish left there now, it collapsed in the 90's. I remember the fish boats used to block the vessels from Alaska, because they came down here to catch our fish. This way, the big boats would not come back. Unfortunately, the town got revenues from the fisher men coming to town, which they are now lacking, because they do not go there anymore. Prince Rupert is now relying on recreational fishing to make money.

There used to be wild salmon in California, but the fish are moving up north. In other words, the fish are declining the further south you go. It is expected that the Fraser River and Skeena River are next, because there are only about a handful of runs left.

How would you join your nets when you were a fisher man?

Most people would join them by hand, especially those fishing in the river, because the nets are smaller. I knew this guy, who specialized in joining nets. Many fisher men would hire him, because he was fast and very good. I do not know about anyone using machines though. There are different types of nets too; gillnets, where the fish is caught once their heads are in, because their gills get caught in the net. Further, there are seines, in which you scoop up the fish under the surface, and then trawls that scoop the fish on the bottom of the ocean. These nets do however catch more fish types than intended. Lastly, nets are actually very expensive, especially the big ones.

What do you think about Aquaculture?

Even though it is kind of sad, aquaculture is the way of the future, due to the declining fisheries. According to studies and a biologist I know it is not all that bad. Mostly it is just hear say that aquaculture is bad for the environment. I have heard that escapes are not as bad as people say they are. However, fish farms have problems with seals breaking into the fish farms. I have heard that the fish farm fish does not taste as good as the wild fish.

Telephone Interviews with Oregon Department of Fish and Wildlife, Washington Department of Fish and Wildlife and Fisheries and Ocean Canada

Interview with Michelle Grooms - Oregon Department of Fish and Wildlife

Who is governing the commercial fisheries in Oregon?

The fisheries are complex. Some fisheries require state permits, others federal permits, some both, and others none. The commercial fishing rules are made through federal and state agencies. There is public input in the rule making processes. The state rules are either through the Oregon State Legislature or the Fish and Wildlife Commission. The 2009 Oregon Commercial Fishing Synopsis will be a good start to understanding Oregon commercial fisheries.

There are some fisheries that Oregon manages to 200 nautical miles. For example crab. By rule though, any commercial boat fishing inside 3 nautical miles must land fish in Oregon.

Further out than 3 miles, the fishery is managed either by NOAA or Oregon Department of Fish and Wildlife. In the case of crab the current rule is that Oregon Crab Permit holders within 200 nautical miles offshore must land in Oregon.

Interview with Guy Chilton - Oregon Department of Fish and Wildlife

What kind, and how many, fish farms do you have in Oregon?

At present there are 31 licensed private hatcheries in Oregon. This number has remained fairly steady over the past 5 years, and I don't expect to see any increase in the near future. Most of these hatcheries are small, family-run operations producing less than 10,000 pound of fish per year; the largest produces approximately 175,000 pounds per year.

In addition there are 32 hatcheries operated by the State of Oregon for production of salmon and trout for release into Oregon waters.

One of the reasons that there is not much ocean fish farming on the US west coast is government regulations, mainly environmental regulations. Additionally, the US west coast (with the exception of Alaska) does not offer many sheltered locations where net pen farming could take place. Both British Columbia and Norway have many coastal islands which can protect net pen operations from severe storms.

Interview with Carol Stedman - Washington Department of Fish and Wildlife

How many commercial fishing licenses were issued in Washington last year?

We issued 3078 commercial licenses last year. As far as I know we have no fish farming in our coastal waters.

Telephone Interview Harviw Eng - Fisheries and Ocean Canada

How many commercial fishing licenses were issued in B.C. last year?

I do not have the numbers for 2008, but in 2006 there were issued 6398 commercial licenses in B.C. In order to obtain a license, the fishermen must purchase it from another fisherman or vessel, because there is limited entry to these licenses. Most of the fishermen sell the fish in B.C.

Telephone Interview with Kevin Oncline – Wavemaster Net Service Inc

I understand that you sell fish nets, what kind of fish nets do you sell and who is your main customers; fish farms or fisheries?

We sell fish net exclusively to fish farms, but we do not manufacture them here.

Since you do not build the nets here, where do you buy them?

Many companies buy from India and Asia, we buy from Chile. These are the cheapest alternative.

Who are your competitors?

Campbell River Net Loft and Cards Aquaculture are our main competitors. We do not have many in the U.S.

How is the expansion of Aquaculture in Canada?

Lately the process of establishing new fish farms have been slow here, but I think that people are starting to understand the importance of it, in a 5 to 10 years I believe this industry will grow, but the current situation is moderate.

Face to Face Interview with Kevin Online – Wavemaster Net Service Inc

In the telephone interview you mentioned that you do not join any nets here?

No we do not do any of that here, because what we do is all service. We wash old nets and fix them. If the net shrinks we have to add in sections of new mesh. I find that the nets from Europe are all coming in with ropes sewn with a machine seam. But the nets that come from Chile are all hand sewn because the labour is so cheap. I also offer new nets for sale.

A lot of the guys here used to use Yuki's. We have got one that has been sitting here for 4 or 5 years. There were problems with running these machines because there were only one guy on the whole island to service these machines.

Yuki's? Is that another type of machine?

Yes, it is a Japanese company that makes household sewing machines

We are researching the Pacific market and our impression is that it is not that big. We heard that the fishing industry is decreasing, but we are hoping that the aquaculture will expand.

The problem here is that our industry has been over 80 000 metric tons, probably for the last 10 years. And the political climate here is really not favourable to aquaculture. Fishing stocks have declined, not only here but also globally.

I think Akva Group is now basically a collection of various companies that have offered different products over the years in two varies types of aqua culture operations globally. And the reason for the merge was that there has been a consolidation in the industry.

There are three Norwegian companies who farm globally and they have three Canadian operations, and then you have half a dozen more service companies trying to offer their products. The problem is that they pick one company against another and then they can just drive the prices down so that it is almost like a monopoly. We had 65 companies when we first started fish farming but now we only have three. And your options are a little bit better when you have 65 companies to serve rather than three. The people that are involved with Akva Group, said; "you know what, I think we need to consolidate the service side of the industry". In that way we have more options.

Do you use nylon or polyester netting?

We use nylon. Polyester is somewhat used in Chile, but polyester has a heavier weight for the same breaking strength. It is also cheaper, but only by 15%. If you are dipping the nets in paint it will be more expensive to dip the heavy ones because the heavier weight, the more paint it uses.

Do you know if the fish farmers use nets outside the inner net to protect the fish from predators?

Yes, some companies do and these nets are called predator nets. They surround the net as a secondary container.

Do you think there is a market for Amatec's machines here?

You do have a market for your machine; the question is where it is. You mentioned United States, the problem there is the heavy control and regulations on fish farming they have. We are currently dealing with projects in Mexico, Hawaii and some Caribbean companies. I have had inquiries from Brazil recently, but we are mainly supposed to focus on North America. Mexico is considered part of it because of the free trade agreement.

Regarding the netting industry, the East Coast of Canada has a small fish farming industry and it is growing now that they are going into Cod in Newfoundland.

When I graduated from university I worked in Alaska and Yukon. I was a Salmon biologist looking after Sakai and various different species, so I got to see firsthand that a lot of people argue against fish farming, but they do not really understand what have been going on for the last hundred years. You can go to Phoenix and they will say: "Salmon used to be here, then the fish farms came, and they are all gone now."

When you are doing field work, you realize that the genetics have been completely altered because of specialized equipment. The best example I can think of is that we used to have gillnets across the river so that the big Chinook got caught. The smaller ones got through because they used smaller nets. So eventually what happened was that they took out all the biggest and fastest growing Chinooks. What we saw was that the age class structure changed so that there are more young Chinooks. You should always have a nature one to one ratio with female and male fish and we found that in some rivers there were five to one male to females. Alaska deceived them because they changed the total dynamic of the eco system.

Do you think land based aquaculture would be something the industry would consider in the future?

Depending on where you are and what country you are in, there are different species and opportunities to do things. Salmon are not particularly good to land base. When I was in my last year in university, they said to me that my last assignment was to write a big paper on one particular species and tell them if you think it will be suitable for aquaculture. There are species that love high densities, so I tell people that salmon is like free ranged chickens. Free ranged chickens are put in a yard and they have a fence surrounding them, but they are not jammed in. It is the same with the salmon when you put them in a regular fish farm they take care of themselves, but if you try to jam them it will not work. Try to jam them in a land based fish farm, the salmon really do not like it and they die. So you need to get the right densities to make it profitable. People are willing to pay 30% percent more for organic food, but it will cost you more than 30-35% more to raise salmon in an organic environment. However, there are lots of species that can take higher densities and would love it; those species would be suitable for land based aquaculture.

Do you see this development of land based aquaculture as a threat to your company?

No, not really. I think there will always be a place for nets. Another thing you have to take in to account is that people around the world eat different types of seafood, some people will eat salmon and some people will eat another species. People will eat what they culturally grew up with. Salmon will always be a valuable fish because it is so healthy and this species is not suitable for this kind of aquaculture. Over 50% of the production of seafood is now aquaculture based.

Do you think the fish stocks will increase by 2030?

Everyone is saying that fish should be wild and that the fisheries should catch the wild fish. That would be great except from the fact that we have politics. We have a common resource and there are very few studies of commercial fisheries that have ever suggested that they are sustainable. Most of them have failed, but there are some that can claim to be sustainable.

So what do you think will happen to the fish net industry since the fishing industry is declining?

What is going to be interesting is if the energy prices were to go back up and commodities are up high , there will be some shifting when social change occur in countries like Chile, China and India. If we see this social change occur, we will see some of the labour being done there come back to these areas. It will no longer make sense shipping containers from China, India or Chile to here because the labour cost will be similar anyways.

I think there will always be a commercial fishing industry here, of various species, but it has to be very limited. We need a shift of mind because there are still people holding on to the

dream that everything is somehow miraculously going to go back to the way it was. They are dreaming that it will be commercial fishing again and that their sons and grandsons will be commercial fishermen as well. I am more of a pessimist; I just don't believe that it is going to happen. There is too much politics. I think it is remarkable that there are some fisheries that still are sustainable. There are other tremendous markets for nets too, like golf and other sport nettings.

Are there a lot of First Nations here that are running fish farms on their own?

Not on their own, but there are agreements. So there is definitely an area where First Nations both like and support fish farming, but there is still other First Nations that are holding on to their traditions of commercial fishing.

Do they have any power to try to decrease aqua culture?

Oh yes, they have ability to do that. They have held up lots of applications over the years. They can make it extremely difficult because as a part of the process when you apply to get a new site you have to basically work out some kind of agreement with the First Nations in that area.

Telephone Interview with Geoff Senichenko – the Wilderness Committee

What are your views on commercial fishing and fish farming?

We are not against either commercial fishing or fish farming, but they have to be done right and sustainably. Commercial fishing of wild salmon must be greatly reduced, almost stopped, until stocks recover to historic levels, since many runs are depleted. The commercial fishery at sea must be phased out and shifted to a river fishery. Live traps should only be used, such as beach seines, weirs and fish wheels. Hatchery fish can be retained, while wild fish can be released. Along with this revamping of commercial fishing industry, serious large scale rehabilitation and protection of stream salmon habitat must be done by both DFO/federal government and provincial government, including protection and rehab of stream buffers from resource extraction and siltation reduced from resource extraction.

What are your arguments against fish farming?

The Wilderness Committee has been focusing on protecting wild salmon from the effects of salmon farming. Open-net cage salmon farming breeds parasitic sea lice and disease that kills juvenile wild salmon that migrate past farms on their way out to the sea. Loss of protein worldwide to feed farmed salmon is unsustainable, since salmon are carnivores. Raw sewage, toxic chemicals, pesticides and drugs also emanate from salmon farms polluting marine life and also your dinner plate.

What are your desired results?

Governments must prevent wild salmon from disappearing like the Atlantic cod. The provincial and federal governments need to immediately shut down salmon farms along wild salmon migration routes down the entire coast of B.C. Then over the next five years governments need to phase out salmon farms, of any type, as they are unsustainable

Do you have any suggestion for improvement?

Raising salmon in closed containers, either on land or on sea, could potentially solve some of the problems, such as minimizing marine mammal culling, farmed salmon escapes, as well as sea lice, disease, sewage and toxin transfer between the farm pens and the marine ecosystem. While closed containment would be a good first step, the Wilderness Committee believes that salmon farming is intrinsically unsustainable because of the global loss of protein when raising carnivores, and toxic drugs and chemicals needed to raise salmon end up on people's dinner plates. Therefore both levels of government also need to commit and implement a 5 year phase out plan of salmon farms, of any type, as they are unsustainable. Other types of sustainable aquaculture could be explored, such as raising herbivorous/vegetarian fish, such as Tilapia and others, on land in a closed container where the sustainability issues could be addressed. Aquaculture has been done sustainably in Asia for thousands of years in waste recycling closed loop permaculture systems.

What have been done so far, and what needs to be done in the future?

We have done many rallies, government committee submissions, letter writing campaigns, petitioning, media reports and educational publications.

Interview with Miro Cernetig – Journalist, The Vancouver Sun

In your column you mention that the salmon population is declining in the Fraser River, is this something you mean is unique to that river, or is the general salmon population declining?

The thing is that there are various species of salmon. There are about 5 different types of salmon in the Fraser River. Some of them are doing OK. The ones that are getting killed in the Fraser River are Sockeye and Coho Salmon. I used to cover this in detail for years when I worked at the Global Mail. I covered this from 1993 to 1998 when there was a big salmon 'war'. The first nations 'battled' with the commercial fisheries and the sports fishers. The case paradigm of the political interests rather than the pure environmentalists is that you have the first nations, the commercial fisheries which go back a hundred years or more and then you have the sports fishing industry, which is basically tourism.

An interesting thing is that 25 years ago, you could catch lots of fish in English Bay, the Vancouver Sun used to have a fish-derby every year where thousands of people would go out in boats and fish for salmon, the one who catches the biggest salmon would win a prize.

That was eventually stopped, because they were fishing out the salmon in the area. It gives you an idea of how numerous they used to be. They used to be considered like the cod in the Atlantic. And now we have the Vancouver Sun Run instead since the fish-derby had become politically incorrect. It was not until then that people first realized that the Fraser River salmon were not going to be endless and now that is proven true.

The disappearing fish is a result of human development of infrastructure, some of the reason is overfishing, and another one is poaching by the first nations. To some degree it is also due to climate changes.

If you look at the North-American development from east to west you could see the species disappear as people moved from the east to the west. For example, there used to be cougars in New York, but then they were nearly extinct. The same thing goes for salmon.

We heard that in California there is pretty much nothing left?

Yes, that was what I was getting to. And as you go further up north you will find the fish stocks increasing as you travel. In California they called it a national emergency last year because there were so few fish left. If you move from Fraser River and up to Alaska it is definitely healthier in form of fish population. So basically what you are seeing is that the circle is getting tighter and tighter and the Fraser River is the next Columbia River, possibly, if we do not act accordingly. The Columbia River is in Oregon and they dammed the river. The salmon was thriving there but after they dammed it, it has been a steady decrease of fish there.

You also mention that if the salmon in the river disappear, the Chilean and Norwegian fish farmers can supply enough fish, but many say that fish farming salmon is one of the causes of diminishing wild salmon; can this become an even more heated debate?

That is a good question. I think that as long as there is wild salmon, the debate will be heated, but if they disappear completely, there will not be anything to lose. Then they probably would not care. The Norwegians were pioneers in regards of fish farming technology. The Chileans sort of took a lot of what was going on in BC and went down to Chile and became big players there. This is a very complicated discussion, because what you hear a lot about in the media are from the environmentalists, whom do not like fish farming. Alex Morton and people like that are doing good work, but what they do not tell you is that if you go to the First Nations they would tell you that they wanted fish farms, because they want to keep their jobs.

There is a court case now that most likely is going to push the jurisdiction from the province back to the federal government. They will have a slower but deeper analysis of the

environmental consequences because of less political stakes. And what I think you're going to see is more rigors on the politicians that come out for the fish farms. There is talk about newer technology, like land based fish farms that use tanks, instead of nets in the water. Another factor that is going to drive this discussion besides the politics is the price of fish. If the price of fish goes high enough, we will likely see larger and more technologically complex fish farms. There will most likely be an increase in the industry. In fact, the fish farms have increased lately were the commercial fishing has declined. If you look at the trends of the commercial fishing industry, there is no doubt what is going on there. In BC it has gone slower, because of the politics of it, but I think BC is the exception.

When we are talking about fish farming, people assume its salmon farming but what they do not realize is that it has become almost an aquarium. Aquaculture in China for example is massive. I do not think it is a particularly good thing. It is a growing industry. If you divorce yourself from the emotion and the politics of it you have to ask yourself what is the trend line here? And the trend line is up. I think fish farming is going to be put under a microscope here in Canada and I think there will be law suits against them because they are damaging the wild population.

You mentioned that the jurisdiction is possibly changing from provincial to federal, is that just here in B.C. or in all of Canada?

The way it works now is that the federal government has jurisdiction over all coastal water, actually the provinces has almost no control over the local fishing, they can do things like regulate on the land, but constitutionally it is in the hands of the federal government. What has happened is that in a recent court case they suggested that the provinces does not have jurisdiction over the regulation of fish farms. When the debate started it was viewed as controversial but not very big. Now that the industry has grown there is more pressure on the federal government to regulate it by the public, environmentalists and even the First Nations. However, rivers are provincial jurisdiction and that is what makes this so complicated. Salmon is caught in a jurisdictional battle.

Do think that the recession could create lesser demand for salmon and that the salmon population in the Fraser River could increase by itself?

I think there is two ways to look at that. Salmon has two or three different pressures on them. Besides the environmental, there is the demand for them that comes from sports fishing/tourism, it comes from the commercial fisheries which is basically market driven and the third thing is the First Nations. The recession might create more pressure on the salmon within the rivers which could increase poaching but also their attempt to maximize what they can catch legally, which again will lead to a negative pressure on the population. The global demand for high end salmon like sushi will experience decreased pressure because of less demand. The sports fishing could experience a decreased pressure as well. But on the

other hand the Canadian Dollar has decreased in value so it is cheaper to come here, also the traditional tourists that choose to fish here tend to be wealthy.

You mentioned that hundreds of environmentalists and politicians involved with the Fraser Basin Council met a while ago, what was the outcome of this meeting?

There is no real results from that gathering, it is rather a “get-together” that they agree to. It is not meant to be a meeting to achieve results. It is more of a gathering where they present issues and hoping that the report will create public opinion. The agenda of this non-political agency is to create public awareness on issues related to the Fraser River.

You talked about the need for a new salmon strategy, making the fish an iconic symbol of sorts; do you truly believe that this will prevent pollution in the Fraser River, building developments too close to the river and so on?

Yes I do. Not directly, but by doing so you will practically make it an endangered species without officially making it endangered. This means that politically it will be very difficult to do anything to hurt the salmon directly. Basically, by making it BC’s official fish, you de-politicize it and then you make it very difficult to attack it.

Lastly, we were wondering if you have some advice on more resources on the fishing industry in B.C.?

Pacific Salmon Foundation, Sports Fishing Industries BC, Suzuki Foundation, and SOS (Save Our Salmon) Foundation are some resources to look further into.

I think that fish farming here is just going to get bigger and bigger, and that they will focus on newer technology such as going from nets in the water to tanks on land.

Interview with Rob Walker – AgriMarine (Closed-Containment Fish Farm)

What type of nets do you use in your fish farm?

We use some nets, but since we are running a closed containment fish farm we do not need that many nets. However we need some nets to cover the containment to avoid birds diving into the containment and eating the fish. We use nets for that.

I guess you do not use any nets here then?

No, not in the same way. However we have an obligation to use nets around the containment in case one of the systems breaks down during a storm.

How long have you been trying to develop this system?

The technology was developed in 1999. These system are pretty straight forward, we have one building where there are contained oxygen which we pump down to the system where the fish is. We proved that we could raise healthy salmon in a closed containment system with four concrete ponds with electric pumps that poured 1,500 gallons of seawater per minute through each. Then the fish is sold to the Vancouver Island based grocery chain Thrifty Foods under the label "Eco-Salmon "

Do you think more fish farms will start using systems like this?

We hope so. This particular system has been tried in several environments and it works fine in lakes where there is no tidal movement. There is just not enough capacity here to make it worthwhile. We used to have open net pens on the west side of Vancouver Island, but we prefer the closed ones. With the close containments we will have no escapes at all, and we also avoid the problems with sea lions biting through the nets.

How do you look at land based fish farms?

We did try a land based system for about 5 years, where the design had the same variable. But I decided to stop doing that because it was very expensive. We found out it was not that profitable in the long run.

Have you experienced pressure from environmental organizations?

They are actually very supportive. We get moral support but no financial support. We have had a lot of support from the Suzuki Foundation and CARR. They have been backing us for many years.

We thought they were more pro land based containments?

They understand that there is an economic issue there. Land based it great, there is no denial that the technology ensures a clean system, but the cost is just too high. If you cannot afford it, you would have to increase the price on the fish. If the fish is too expensive, no one will buy it and the effort will be wasted.

I think the system we have designed has answered all of the environmental organizations' demands, especially the escaping problem. They do not want the Atlantic salmon in the Pacific Ocean.

We know that many people are opposed fish farming; do you think they would rather buy the fish from the closed-containment systems than from the open nets containment systems, since it is more environmental friendly?

In B.C. we have a very strong environmental sensitivity and people are very aware of these issues. In Central Canada it is not the same, fish is fish. They do not care where it comes from, but with that having said there is still a lot of awareness. They are very passionate about their source of food and want to make sure it is right.

Do you sell fish to the U.S. too?

We used to sell fish to the U.S. We just have not had any fish to sell lately.

Have you ever farmed Atlantic salmon?

No, we have always only farmed Pacific Salmon

What is your main reason for farming Pacific salmon?

Our market wanted Pacific salmon, so we gave them what they wanted. There are several economic reasons to farm the Atlantic salmon even if we do not farm this species. I think it will take time before other fish farmers adapt our technology, but I believe that the demand for nets in fish farms will decrease in time.

What do you think about the myth about sea lice, escapes, waste etc.?

With the closed containments system there will not be any escapes at all.

Regarding the lice, we have not had any lice in this area, because we do not have the out flow rivers here. Sea lice on The Pacific salmon are very limited. They are almost immune and they all seem to shake it off.

What about the B.C. provincial government, do they support these systems?

The provincial government is a `political football`. They have 4000 people working in the net cage industry right now that they do not want to upset. That is why the Government cannot promote this kind of industry. From a finical prospective they will not put any money into this kind of fish farming, because they do not have confidence in the project. Our research has been funded by the federal government. There is an organization called Sustainable Development Technology and they provided some funding for this system. We have also

received some funding from the Gordon and Living More Foundation in the U.S. They put a lot of money into the system.

Is it difficult to get a license for closed containment fish farms?

There is a lot of government regulations involved regarding licensing; it's a very long and involved process. It does not matter if it is net cage or closed containments in fact it is more difficult for close containment because the government does not trust the technology. They make sure you go through the regulations and got everything covered, it is very challenging.

So it is a slow process?

Well no one is applying for closed containment licensing, but they are applying for net cage licenses and that is a very slow process.

Do the First Nations support this system?

Yes, a number of them do especially the locals.

Do you think fish farming will expand in the future?

Yes, that is why we are in this business. The net cage industry cannot expand because there is too much controversy, but with a closed containment system I think they can expand. Actually, a lot of sites here on the Island and close to Vancouver are really suitable for closed containments, and bad for open net caging.

Do you know how many fish farms there are in total in B.C.?

I think there are 120 licenses, but only 70 operating sites.

Telephone Interview with Doren Anderson – Campbell River Netloft Ltd

I understand that you sell different fish nets, what kind of fish nets do you sell and who are your main customers; fish farms or fisheries?

We sell fishnets to grow aquaculture, so our main customers are fish farms.

Who is your supplier of machines? Do you make the nets yourself or do you buy them from someone else?

We buy the machines from a company in Italy, and one in Norway (Amatec).

We join/build the nets ourselves here in Canada. We sew some of them by hand but we also use sewing machines.

What is future outlook for this industry?

We expect the market to grow in the future, at least that is what we hope.

Since you already use a sewing machine, what brand do you use and would you be interested in trying a new machine?

Our company is owned by the Norwegian company MøreNot AS, and they sent us the machine they used in Norway for production here as well. The machine is from Amatec, and they have already been here to support us. We also have a couple of machines from Buraschi, the Italian company.

Who are your competitors?

Cards aquaculture and Wavemaster are our main competitors.

Face to Face Interview with Doren Anderson and Sheryl Lee – Campbell River Netloft

I know that you are using Amatec's machines. What do you do if the machine breaks down?

Sheryl: Every time we break the machine, Sigurd from Amatec travels to Canada to fix it for us.

So if something happens and you call Sigurd he can come right away?

Doren: No, it depends on the flights. He told me that he is able to find cheap flight tickets to Vancouver if he stays over on a Saturday. We pay for Sigurd's tickets, accommodation, work time and spare parts, but he is not here that often.

Sheryl: The biggest problem is the parts. If we need the nets to be done in a short amount of time and something breaks, the problem is that the parts are 6 weeks away. We cannot get the parts from anyone else, they have to come from Norway, so if we just had someone here that could provide us with the parts and service it would have been much better.

Where did you first hear about Amatec?

Doren: I had not heard about this product or the company until I went to a tradeshow in Trondheim Norway. I do not think they have enough information on the internet.

But have you seen their homepage?

Doren: Yes, but I don't think it is enough. I think they should advertise within the industry so that people in the right industry would be able to notice them.

How many people are trained to use the Amatec machines at your company?

Doren: We have had 5 or 6 different people on and off the machines, because they were trying to learn how to use it. I think it would have been better to have only one person learning it, and then he/she could pass it on to the rest. At one time we had too many people working on the machine, and it became confusing because we had to teach the same thing over and over again to different people.

So everybody is using this machine?

Sheryl: Not now, I am currently the only one who runs it which is much easier. I know the machine quite well right now and often knows what to do if it jams.

One day of production on this machine will provide enough hand work for four people for three or four days. We spent a lot of money on broken parts when we first got it because we did not know how to use it properly, but now I know a lot more about how to handle the machine.

Are the other employees sewing by hand?

Sheryl: Yes, some of those nets are used and are only being repaired. The rest of them are new nets, but we have to put the rings on by hand. We have to stop the machine to put a ring on once in a while and the machine could not connect them nicely. When we need to stop every two meters to sew a ring on, we are better off doing it by hand.

Do you think there is a bigger market for this machine on the sport net market?

Doren: There is a guy in Nanaimo that does sport nets. He is not using a machine, he only makes them by hand. When they sew the golf nets by hand you cannot see the big ugly seam you get when you are using the machine. With a machine you get a big chunky seam, which does not matter when it is under water.

Do you think there is a market for this machine on the agriculture net market?

Doren: I think that some of the bird netting can be sewn with a household machine because it needs to be light. The seam from the Amatec machines would make the net too heavy for this use.

In the telephone interview you mentioned that your main costumers are fish farmers, is this market stabile?

Doren: The market for these machines is primarily new nets, because the used nets are too dirty to run through the machine. We have a lot of webs for new nets on our shelves right now. Our plan is to empty this storage and then we are going to get what we need from South America or Asia instead of custom sewing them for every customer here. Orders for new nets do not happen anymore, we cannot compete with cheap labour countries.

Sheryl: We have had a couple of big companies that have bought smaller companies, so now they have surplus in nets too. The consumers have to use those nets before they get new ones, so it will probably be a couple of years before we end up picking up orders again. About five years ago we actually couldn't keep up with all the orders.

Doren: If we had a choice we would use the mesh from Norway all the time since that mesh is best fitted for the machine. The problem is that it takes 6 to 8 weeks to get a mesh from Norway and the customers do not want to wait for an order. The mesh we are working on right now has been here since 2000. If a company likes a certain type of mesh, they often want to buy more, but sometimes the manufacturer has changed his production. Then they are stuck with the mesh and you would have to make deals with them ten years later to get rid of it.

Do you think the Aquaculture industry will increase in the future?

Doren: Yes, I think it will in the future. Most companies I know are planning to grow.

Sheryl: We are just waiting for the demand for nets from Chile decreases, because our nets last longer. Some are 10 or 12 years old and are still being used. The maintenance of the cheap nets from Chile will eventually not be worth it, so maybe they will come back to us in a couple of years.

Doren: During the recession, customers are more concerned about the price than about the quality of the nets. We have many people coming here to fix nets they have bought in Chile because they have shrunk. It is too expensive for them to send them back to Chile for repairs, so they come to us instead. Sometimes it will take up to 60 to 200 hours to fix it and that will be an expensive repair for a cheap net.

Sheryl: We believe that in two or three years, when the nets are no longer useful, they will notice that they have only gotten a quarter of a life out of them. Maybe then they will start using our nets again.

Doren: There will always be service though, they have to have service, but we do not want to run dirty nets through the machines. This is why we cannot repair the existing nets on the machine, because all the dirt from it will jam the machine when the net runs through.

Do you think it will be better when the recession is over?

Doren: Not for this industry. There will still be fish; it is not affected by the recession.

Telephone interview with Kevin Bright at American Gold Seafoods

You state on your website that you have 120 pens of Bainbridge Island, port Angeles, Cypress Island and Hope Island within Puget Sound, what does this mean? How many fish farms is that?

We only have one fish farm, comprising 8 net pens in 4 distinct areas. They are small, much smaller than the fish farms in B.C. which normally has 180 net pens in one.

What is the value of the fish you produce?

That is confidential.

Why don't you have more fish farms?

Because of the opposition, mostly people like doctors and lawyers owning expensive houses near the shore. They don't want to see fish farms or have them close to their properties. In

Campbell River it is easier to get permits because they don't interfere with the environment, and are not as close to properties as in Puget Sound.

Do you see a future for expanding the aquaculture in Washington?

Not for now, but there are research going on regarding underwater cages that are not exposed for the public to see. The process of getting a permit is very slow here in Washington.

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