UBC Social Ecological Economic Development Studies (SEEDS) Student Report

Marketing Strategy for the UBC / Alex Fraser Research Forest

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Business Management in the Wood Industry

Marketing Strategy for the UBC / Alex Fraser Research Forest

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ABSTRACT

The markets that I wish to target are companies within the secondary wood industry who are producing innovative and specialty products. The size of the small diameter Douglas-fir trees do not allow the manufacturing of products into commodity markets, thus market segmentation is required to locate a viable product that can be made from this resource.

The UBC / Alex Fraser Research Forest should establish a manufacturing facility to produce lamels. A lamel is a small strip of wood. They will be sold to companies that produce either of the 3 following products:

- flooring,
- window sashes,
- and hybrid walls for log homes.

Eventually, the process could be vertically integrated to incorporate one, all, or even more products. However, this will only occur when the process is deemed cost-effective.

The correct marketing mix of promotion, place, price and product will allow the establishment of partnerships with two BC value-added companies. Logsmith Homes Ltd., Chemainus, BC, and Legacy Wood Works Ltd, Okanagan Falls, are two companies were a partnership between them and the UBC / Alex Fraser Research Forest could produce an economically and sustainable solution to the unique business challenge facing the Caribou Forest Region.

KEY WORDS: Douglas-fir, small diameter trees, secondary wood industry, hybrid walls, log homes, flooring, window sashes, value-added.

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I have provided the following individuals with a copy of this report:

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1.0 INTRODUCTION

The task was to develop a marketing strategy for the utilization of the small diameter Douglas-fir that is being commercially thinned at the UBC / Alex Fraser Research Forest. I thought the best place to tackle this task was to connect the UBC / Alex Fraser Research Forest with a company that produces wood products made out of Douglas-fir, so that a prosperous partnership can be established.

2.0 OPPORTUNITY

The UBC / Alex Fraser Research Forest, which is located in Williams Lake, is currently facing a unique business challenge – one with social, ecological, and economic dimensions. The character of dry forests of British Columbia (and much of western North America) has changed significantly over the past century. Due to changes in land use and settlement patterns, the frequency of forest fires had been drastically reduced. Currently, most sample plots have not had a fire of a period exceeding the historic maximum.

As result of their disturbance history and ecology, many of the dry forests have accumulated very high densities of small trees and lack large trees. Because of the forests are moisture-limited, the large numbers of small trees compete for soil water with large trees, and reduce of the large trees. The mule deer are reliant on the cover and forage provided by large Douglas-fir trees, thus it is important for managers to ensure that a continuous supply of these trees is available throughout each winter range.

In the UBC / Alex Fraser Research Forest and the Caribou Forest Region of BC, there are large numbers of these small diameter Douglas-fir trees that need to be harvested so that the forest can produce healthy and large diameter trees. This resource

could establish a 30-year sustainable market of small diameter Douglas fir logs. The approximate size of each log is 10.5 cm top diameter and 6 meter in length.

The resource produces a significant quantity of fibre that can be produced into wood products. This size creates a unique situation because this fiber is too small for commodity products. Yet this resource can be used in innovative products that not only add value along the supply chain, but also create employment opportunities for those who choose to develop these trees into a product. In the end, a proper business plan with the correct marketing strategy will create a prosperous company.

The development of a company can take many years. It can also take many more years until the company sees a profit. This is why I thought it would be wise to find companies in BC that could use this resource. If a partnership can be found, the UBC / Alex Fraser Research Forest can by-pass the development years. This will allow these small diameter trees to be harvested immediately. This will help to open up the forest for the larger trees and create cover and forage for the mule deer during the winter months.

3.0 BC WOOD SPECIALTIES GROUP INQUIRY

In the establishment of a marketing strategy for the UBC / Alex Fraser Research Forest, I considered not to develop a product based on market research, but to connect to the Douglas fir trees to an actual BC company that produces a value-added product. Using the BC Wood Specialties Group's website, I created an inquiry to identify companies that use Douglas-fir as a raw material.

Refer to Appendix I for the Results of the BC Wood Specialties Group Inquiry for flooring, windows, and log homes[1]

BC Wood is a not-for-profit trade association dedicated to growing British Columbia's secondary wood-products manufacturing industry. It was established in 1989 as a partnership between industry and government. BC Wood provides marketing programs to over 600 registered value-added manufacturers, which include cost-shared participation in international tradeshows and events, out-going and incoming trade missions, lead generation through the World-Wide Inquiry System (WWIS) and networking opportunities.[i]

The BC Wood Specialties Group's website indicated that Douglas-fir could be used to as the raw material in the following products:

CATEGORY	PRODUCTS
Cabinet	-Parts/Components -RTA/knockdown
Engineered Building Products	-Structural Composite Lumber -Glulam
Factory-Build or Pre-Fabricated Structures	-Log Homes/buildings Machined or Handcrafted -Pre-cut Garden Sheds -Pre-cut Home Packages
Furniture & Fixtures	-Case Work -Frames/parts -Contract Fixtures -Gazebos -Shelving -Knock Down/Ready-to-Assemble -Outdoor/Garden -Saunas/Hot Tub Finishings
Specialty Items	-Musical Instruments -Signs -Toys/Giftware

[1] The BC Wood Specialties Group Inquiry produced a 154 page document. If you wish to see this document, contact the author at stamour@interchange.ubc.ca.

Remanufactured Products (semi-finished)	-Bins -Crates -Edge-glued Products -Furniture Cutstock -Metric Components -Stackes & Lath -Wood boxes -Box Stock -Decking -Kiln Strips -Mouldings/Pattern Stock -Pallet Stock -Survey Stakes -Window Stock -Door Stock -Laminated Stock -New Pallets -Specialty Lumber -Turning Blocks -Wood Blocks/Blanks

I received numerous emails from companies notifying me that they were or weren't interested in learning more about this opportunity. I contacted the ones that were interested in this project. However, many companies were not able to use these small diameter trees, but they did provided some insight on certain products that these trees would be best suited for. I followed up on my initial inquiry by sending an email to 21 companies.

Refer to Appendix II for thefollow-up letter that I sent to the 21 companies

4.0 PARTNERSHIPS

The marketing strategy for the UBC / Alex Fraser Research Forest would be easy to create if they could just sell the logs to a company for further processing. However, this doesn't seem to be possible because primary mills require logs that can be processed into commodity products such as lumber, plywood, or OSB. The pulp and paper industry

was not researched as a viable product option since chips are relatively inexpensive since they are a by-product from the production of the products mentioned above. Therefore I had a significant reason to make enquiries into secondary wood manufacturers. This side of the wood industry provides the only viable solution in the development of this marketing strategy.

During my contact calls, it became apparent that they are three main products that these small diameter Douglas-fir trees could be made into: hybrid walls for log homes, flooring, and window sashes. These products are currently being produced in BC. There is potential for some other products like stock for panellized garden sheds and post for stair railings. The key to producing the three products is to understand the steps that are required to take this resource and manufacturer it into a raw material.

Harman Lidder, M & K Sawmills, recommends that these trees should be manufactured into flooring because of the tight grain and less opportunity for defects (i.e. Warping) to occur.[ii] He also indicate that this resource cannot be used in any commodity products because of the product dimensions that are produced from these trees. However, these trees could be made into innovative value-added products.

Many companies in the log home industry were very interested in these logs, however, they use logs that have a 10-16" diameter. Shelly Mohammad at Chilliwack Mountain Log Homes said that her company could use these smaller diameter logs in posts for the railings.[iii] She also noted, like many other log home companies, that the demand for small logs in customer dependent.

The most exciting opportunity that developed from my inquiry was with Gary Anderson at Logsmith Homes Ltd.[iv] This company produces a hybrid log home and flooring. The walls are made from engineered logs that contain 3 main sections.[v] The

outside lamina uses Western Red Cedar for when a natural look is desired, otherwise pine or fir is used for a painted outside décor. The inner core layer is created from residue wood pieces, 8" in length or longer and are finger jointed together and/or laminated together. The center foam layer is sandwiched between both wood sides and creates a combined R-value in excess of R20. The mass of wood and insulation acts as a reservoir that it keeps it cool in the summer and warmth in the winter.

Refer to Appendix III for company information on Logsmith Homes Ltd

A partnership with Logsmith Homes Ltd. may become a viable solution to this opportunity because they produce two products that can be made from small diameter Douglas-fir trees; hybrid walls and flooring. Another advantage is this operation has the capacity to dry pieces of Douglas-fir. Another opportunity is with Legacy Wood Works Ltd. in which they produce windows and doors.

5.0 MARKETS

The products that will use the lamels, which are long thin strips of wood, are window sashes, flooring, and hybrid walls in a log home. The three markets that are discussed below as the changes that occur in these markets will affect the outcome of this project. Companies in BC are targeted to use the lamels because they already use Douglas-fir as a material in their products. My initial findings from the BC Wood Specialties Group inquiry and the related contact calls revealed that these products are best suited for Douglas-fir lamels. As this project develops, the UBC / Alex Fraser Research Forest may wish to vertical integrate down the value chain and begin producing these products in-house.

There are three companies that are interested in using these lamels. Logsmith Homes Ltd. would like to use these lamels in their flooring line and hybrid walls. Legacy Wood Works Ltd. manufactures windows and doors. Lamels would be used in the window sash. Don Laslo of Eco-Cedar Canoes would like to be involved in this production. He is currently moving this production process from canoes to panellized garden sheds.

General summaries of the markets for the 3 products are provided below. However it should be noted that the production figures of any company that wish to establish a partnership with the UBC / Alex Fraser Research Forest should be known prior to the manufacturing of any products. This is necessary because their production will reflect their raw material demands. Further discussions with companies' representatives are necessary to provide a better assessment of their company's current and future production rates.

5.1 Window Market:

In BC, there are 35 companies that produce wooden windows while 54 companies manufacture window stock.[vi] These companies are registered with the BC Wood Specialties Group. My BC Wood inquiry indicated that 25 companies use Douglas-fir as a product choice in the production of windows. These companies are relatively small in comparison to other manufacturing industries. Industry Canada indicates that only 7% (8 out of 117) window and door manufacturers in BC have more than 50 employees. [vii] Net revenues in the Wood Window and Door Manufacturing national industry has decreased from $337.2 million in 1990 to $327.0 million in 1999 or by -0.3% per annum on average. In the latest year the growth rate was -31.6%. This negative outlook can be

viewed optimistically as companies who use more innovative designs in their products and improve their marketing strategy could enjoy significant growth. [viii]

The Douglas-fir lamels could be used in window sashes. The cannot be used in the window frame because they do not have the same characteristic features as vertical grain Douglas-fir that comes from old growth trees. A window sash is the framework of a window in which panes of glass are set into. These small diameter trees may have many knots, thus long clear lamels may be scarce to produce. Large windows that need long clear lamels may require smaller lamels that are connected (i.e. fingerjointed) with other pieces. Even though there has been a decline in the amount of windows produce, this should change the demand for windows because housing starts in Canada and US as due to the increase in. Finally, wood windows command 52% of the market share in window industry, thus there should be an increasing demand for wood Douglas-fir windows.

Legacy Wood Works Ltd. currently purchases mixed and vertical grain Douglas-fir window stock (i.e. lamels) in the form of 2x6" and 3x6" kiln dried pieces. The price ranges from $1000 to $1800 per board foot. These pieces are produced into 2x3" and 2¼x 3" window sash. I was not able to obtain information about their yearly raw material quantities, thus further contact with this company is necessary.

5.2 Flooring Market:

There are 3 main types of flooring; wood flooring, carpet and vinyl. In the terms of wood, hardwood strip flooring and parquet-style are the main product groups. Hardwood and softwood flooring are tied mainly to the new housing sector, as well as in the renovation and remodeling sector.[ix] Douglas-fir has one of the higher density values

for a softwood species. The density values are still less than maple and oak which are more commonly used in wood flooring. To increase the hard-wearing qualities, a hard lacquer coating is recommended to increase the life span of Douglas-fir strip or parquet flooring.

The total US production of wood flooring amounts to over US$1 Billion with imports just 2% of this figure. Yet the amount of flooring imports is increasing.[x] There are 82 companies registered with the BC Wood Specialties Group. The number of companies that the BC Wood inquiry determined to produce Douglas-fir flooring was 54. BC companies can produce flooring for domestic and international markets. Japan is an example of an international market where large opportunities for wood flooring inroads exist. There is a significant market for Douglas-fir lamels because of the considerable number of companies that produce Douglas-fir strip or parquet floors and the increase in the housing starts in Canada and the US.

Logsmith Homes Ltd. produces a line of wood flooring. In my contact call with this company I did not ask them if they produce strip or parquet flooring. I also did not get any production information from this company. However, the lamel sizes could be cut into dimensions that best suit strip or parquet flooring .

5.3 Log Home Market:

Log homes are pre-cut and pre-machined timbers supplied as a complete package for the erection of a home shell. Packages may also include windows, doors, millwork and other products needed to finish the structure. Exterior wall members are machined to show wood-grain, which is the beauty of the factory made "logs". [xi]

The US log home starts for 2000 is approximately 5000 homes.[xii] The statistics for 2001 lumps log homes, post & beam, and other types of building systems into one category. The housing starts for this category are roughly 9000 homes.[xiii] Since 4000 post & beam and other types of homes were produced in 2000, the growth of log homes is growing at a snails pace. This area may experience more development between 2000-2010 as many baby-boomers are expected to continue purchasing vacation homes. Log homes lend itself to people looking to build in a remote area as well as it does to residential builders. In remote areas there is a shortage of builders, thus Logsmith Homes Ltd. has designed their product to be a kit where the log home can be quickly built with 2 men in 2 weeks.

The cost for a log home is $80.00US per square foot.[xiv] In comparison, Logsmith Homes Ltd. is selling their hybrid log homes for $100.00CAD per square foot. [xv] They market their new product through trade magazines such as the Cottage Magazine and at trade shows like the Cottage Living Show. Logsmith Homes Ltd. has looked past conventional North American markets and has recently sold it's first home to a Japan homebuyer.

There are 86 log home manufacturers that are registered with the BC Wood Specialties Group. 52 companies handcraft their logs while 34 companies produce log homes that are machined.[xvi] Logsmith Homes Ltd. produced 3 log homes in 2002. Further discussions with this company are necessary because a better assessment of their future log home and flooring production is needed.

6.0 MARKETING MIX

6.1 *PRODUCT:*

There are a few manufacturing steps that are required to turn these trees into a raw material that can be used to supply a company. The first step is to harvest these trees. This is a time consuming task since clear-cutting is not an option. Another forestry technique such as commercial thinning must be used to ensure that the large diameter Douglas-fir trees are allowed to grow in a nurturing environment. After the trees are bucked to length and de-limed, they are transported to a primary breakdown facility.

Following the primary breakdown of a typical sawmill, the manufacturing steps begin with cutting the logs to an optimal length. Then the logs are debarked and processed into boards. This is accomplished through a variety of machines such as a Headrig, Curvesaw, Bandsaw, Canterline, or a Chip'n Saw. Boards that still contain too much wane or do not have a square edge are sent to an Edger. All the boards are processed through a trimmer before being sorted into bins that contain all the same dimensions and moisture content. The next process step is to dry the boards in a kiln. Then they are planned to the final dimensions and graded. The final step is to package and ship the lumber to customers. All the waste that is generated from a sawmill is sent to make products such as pulp, particleboard, and medium density fibreboard.

Although the machines used in the sawmill are worth hundredths of thousands of dollars, the processing of the small diameter Douglas-fir logs should follow the same steps, but economically. Even though sawmills process millions of cubic feet of logs per year, I propose that the UBC / Alex Fraser Research Forest begin with a small processing

facility. By starting slow, quality issues will cost less to repair and overproduction does not occur. Overproduction can cause excess inventory that cannot be sold.

After the trees are harvested, the initial step will be to remove the bark and make a four-sided cant. Figure 1 shows the log and the cant that would be produced. The red box indicates the size of the cant that will be produced if the diameter is constant along the length of the log. If the log significantly tapers, then the yellow box maybe the ideal cant size. When the cant is cut into lamels, the sections that contain wane can be

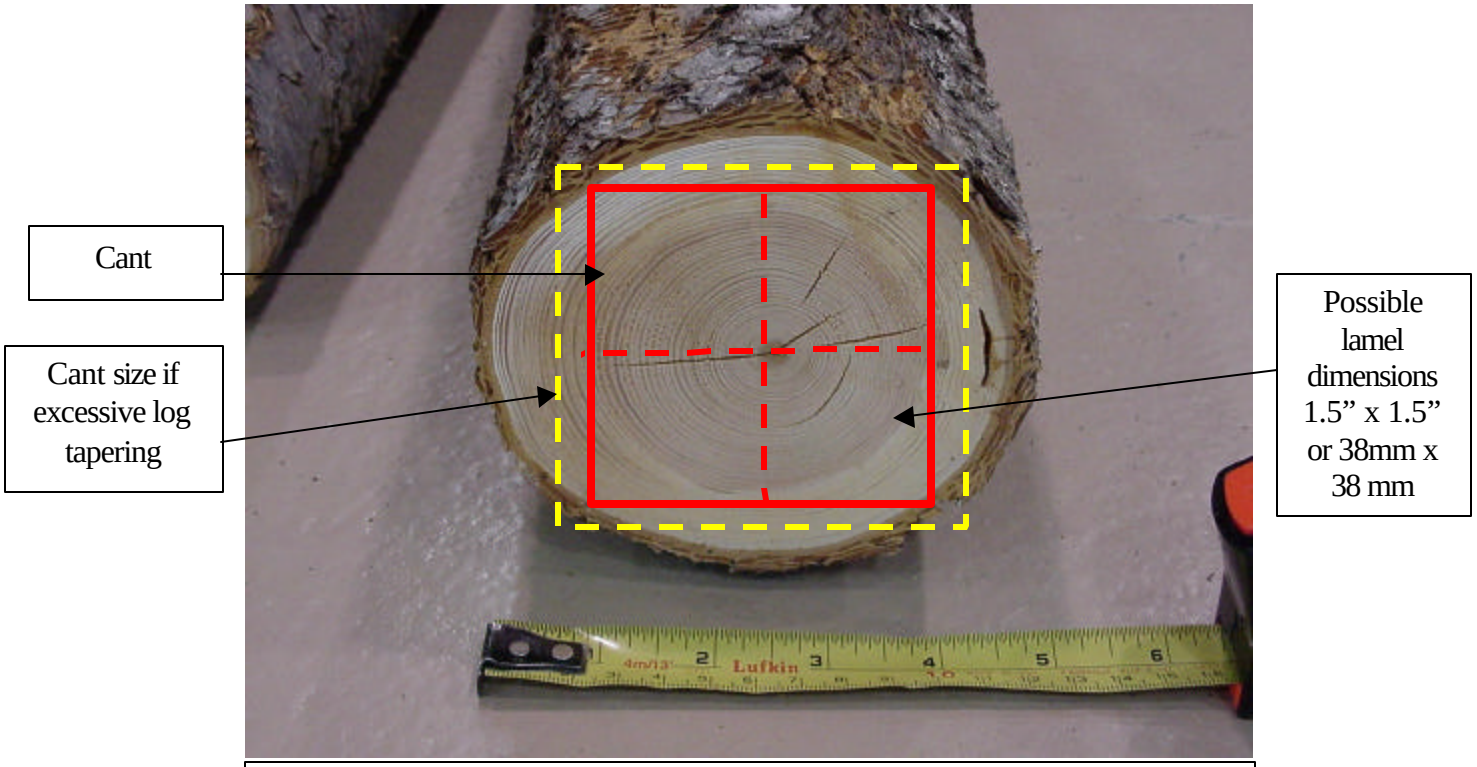

FIGURE 1. Log diameter and produced cant

removed. These lamels are long thin strips of wood. Lamels are the raw material that is required to produce hybrid walls for log homes, flooring, and window sashes. Figure 2

illustrates the taper from two sample logs that were sent to the Centre for Advanced Wood Processing from the UBC / Alex Fraser Research Forest. It also describes the shape of the lamel. Even though a square cant will be cut, once the lamels are cut, they will return to the shape of the log. This is due to the direction of the fiber as it grows in the tree. These defect can be reduce by adding steam when the lamels or cants are dried.

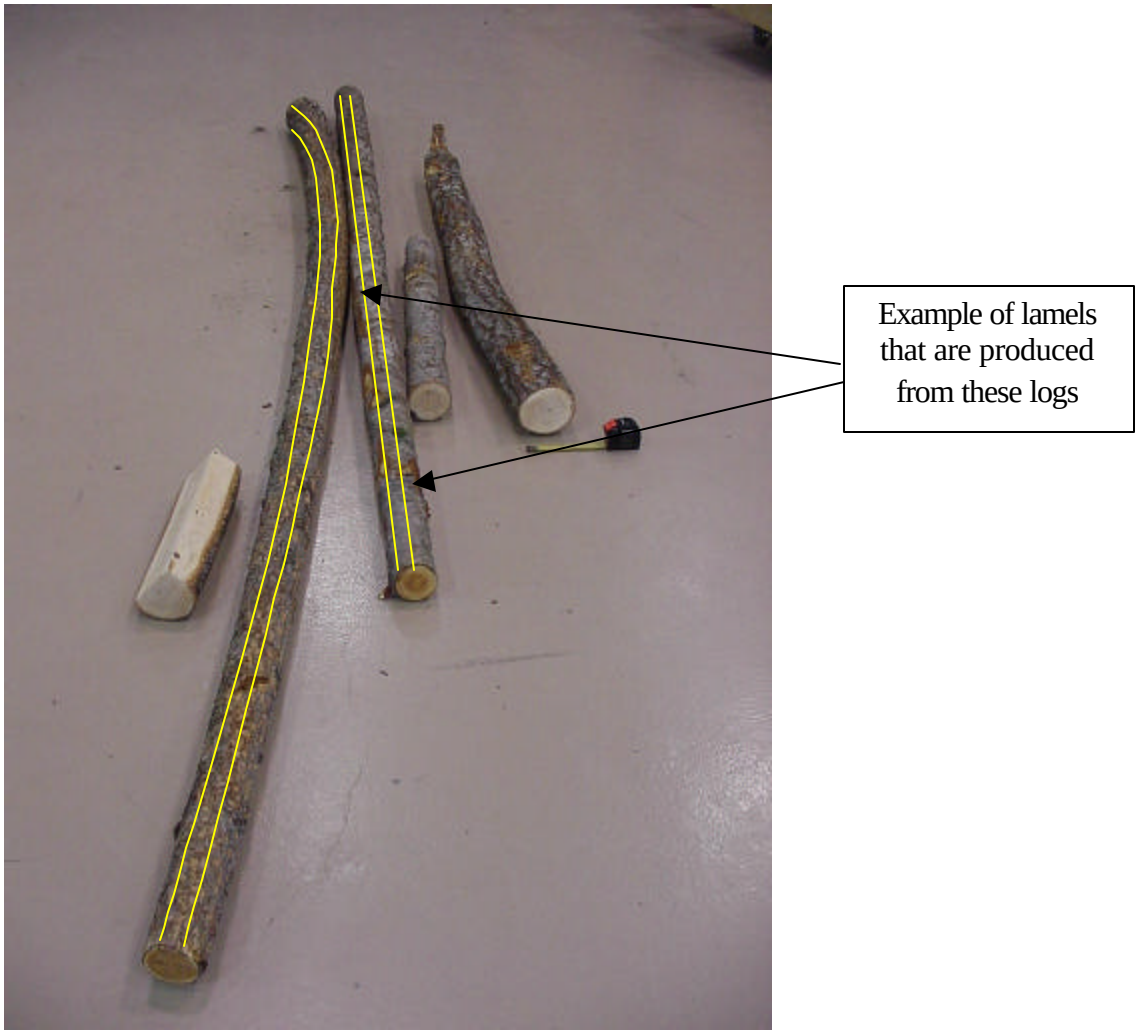

FIGURE 2. Samples of logs from UBC / Alex Fraser Research Forest

It will be more efficient if the cants are cut into lamels after they are dried. Tests can be developed to assess the different drying schedules comparing lamel quality to cant

quality to determine the most effective process. I feel that it is best if cants are dried instead of lamels. This should save handling costs and increase production efficiency.

After the cants are dried, they are then cut and graded into lamels with sizes and grades that are specified by the customer. This process allows an opportunity for a variety of products to be produced. As well as this flexible manufacturing process can quickly produce a customer's product. At the beginning stages of this project, I recommend that a homogenous process be developed as I've described so that the process can be standardized. This should reduce initial quality problems and increase the production rate as workers become more experienced with the process.

Unfortunately the other product that is produced from this process is waste. The waste includes the slabs that are produced when the cants are carved out of the logs and sawdust that is generated by sawing the cants into lamels. The quantity of waste is not significant to sell to producers of oriented strand board, medium density fibreboard, particleboard, or pulp and paper. Therefore the slabs should be chipped into small particles and mixed with the sawdust to be used in a boiler to heat the manufacturing facility and the kilns.

6.2 PROMOTION:

Promotion will play a significant role in this project. Without promotion, the project does not even exist. I have already performed an act of personal selling as I have identifed key companies that wish to establish partnerships. By using personal selling as the main communicating tool, product (i.e. lamels) can be sold to companies and trust can be built. The company's raw material prices and quality standards will be set during

these conversions. Immediate feedback and customer satisfaction will also be communicated between the customer and vendor.

Gaining awareness of this project can be done using publicity and advertising. I recommend using the lower cost tactic since publicity can be achieved by using associations, media, and word-of-mouth to find candidates for partnerships. Associations such as the BC Wood Specialties Group have already allowed my follow-up leader to be sent to 21 companies. Advertising is the other method of promotion. This method allows a company to target a market with their exact message and does not allow media to publicize negative messages. Hopefully publicity and advertising create a "market pull" affect in which companies want to be involved in this project. This will reduce the amount of work required by personal selling.

6.3 PLACE:

The best method in establishing partnerships is to contact the end customers immediately. This has been initially done by my inquiry with the BC Wood Specialties Group. In this project, the selling of goods will occur without an intermediary. Exclusive distribution will occur between the UBC / Alex Fraser Research Forest and its partners. The type of transportation that is required between the partners is trucking since the amount of products sold per unit of purchase will not be in excess of the trucks capacity. As the project develops, further vertical integration can occur if transportation vehicles and/or cargo containers are purchased for in-house purposes. The packaging and treatments can help to market the non-product features of this project. The non-product characteristics include kiln-dried lamels, on-time delivery, monthly feedback sessions

between customer and vendor, and a final product that conforms to the customer's specifications. These features help to promote and differentiate this high quality product!

6.4 PRICE:

There are two pricing strategies that the UBC / Alex Fraser Research Forest should consider are cost-based and value-based pricing. Cost-based pricing is common in the wood industry. However, I recommend that the profit margin should not be 40-50% but 10-15% during the first 2 years of the project. The goal for this project should be to establish partnerships and begin harvesting the small diameter trees, not making a significant profit. This small profit should be reinvested into the project. The profit margin should be increased when the process is operating efficiently and there is a considerable demand for the product.

Value-based pricing is another pricing strategy that the UBC / Alex Fraser Research Forest should consider. Since there will be more discussions with companies in the establishment of a partnership, the price of the lamels will be negotiated. In this pricing strategy, extensive investigation into the market must be accomplished to fully understand the market place. Value-based pricing recognizes what the customer is willing to pay for the product and the non-product attributes.

The price of the lamels will cover the all the cost plus a small profit. The costs that are incurred in this project are:

- Cost to commercially thin forestland
- Cost to purchase land
- Cost to build and operate a manufacturing facility
- Cost to purchase equipment
- Cost to transport goods

- Cost of labour
- Overhead costs
- Miscellaneous costs

Using the manufacturing costs for window and doors industry from 1999 Industry Canada data, the product's cost were divided into three categories. Materials and supplies was 78%, fuel and electricity 2% and salaries and wages represented 20% of the product's cost.[xvii] Although I have gathered some prices for the raw material of various companies, further analysis in this area is required.

There are four main pieces of equipment that are required to start-up this manufacturing facility. A tree cutting device is necessary to carefully cut and remove the logs out of the forest without significantly harming the ecosystem. This processing step could be contracted out to tree fallers who already own this equipment.

The second required piece of machinery will cut the logs into cants. Since this will be a small operation, I recommend contacting Donald Causton at Micromill System Inc. who specializes in affordable and portable sawmills for processing small logs. [xviii] When the operation has enough assets to purchase an optimizing canterline, then USNR or Optmil Machinery Inc. should be contacted.

A kiln is an essential component of this project, as drying of the cants will greatly determine the quality of the final product. Although expensive, the return of investment is primarily based on customer satisfaction, since the final product will not require reprocessing. The Quesnel Enterprise Center may have a kiln that is underutilized. This could be another partnership in an effort to reduce transportation costs. The center is in close proximity to the UBC / Alex Fraser Research Forest. They may even have capacity and the capabilities to process the small diameter logs. Another drying possibility is with Logsmith Homes Inc. because they also have a kiln.

The fourth machine that is required is a planer rip and chop saw. A planer rip machine is a 4 - 6 head moulder with a 7 blade ripping saw which cuts cants into lamels. Weinig Group is the top international producer of machines for the secondary wood industry. They will have a machine that meets the requirements of this process. An affordable chop saw with a Tiger-Stop can be used to accurate cut the lamels. However this is a very labour intensive process. A Germany company called PAUL Maschinenfabrik GmbH & Co. produces an optimizing chopsaw line that would quickly chop and sort the lamels depending on the entered grade specifications. This machine can also come with an in-line grading unit for grading and production consistency.

7.0 STRENGTHS AND WEAKNESSES

There are many strengths to this marketing strategy. The primary development of partnerships with companies that are well established will lower the developmental costs of this project. It also allows the individual's working at the UBC / Alex Fraser Research Forest to use their partner's expertise as they gain their own experiences and further their own knowledge of the wood industry. Overall, both parties will benefit from a partnership because a steady supply of raw material is available to produce a product that already has a customer base. Furthermore, profits that are generated from this project can be used for future investment in product development or new machinery.

Conversely there are a few significant weaknesses that could hurt this marketing strategy economically. The high cost of commercial thinning, which Mr. Day calculates at $\$200/m^3$ is 4 times higher than a sawn log that is cut and removed from a forest.[xix] The capital cost to start the primary breakdown of the logs and the high transportation costs

are added to the cost of commercial thinning. This creates a situation where the economics may not allow any partnerships to be viable. In addition the payback of this project could be quite high. High transportation costs may occur if products are shipped from the UBC / Alex Fraser Research Forest to a primary breakdown facility and then to Logsmith Logs Ltd. on Vancouver Island or Legacy Wood Works Ltd in the Okanagan. Lastly, any payback over 5 years can be viewed as a risking opportunity by some banks. This may cause a problem when this project attempts to gain funding.

There are many opportunities for funding within the forest industry. This project could qualify for a grant through the Forestry Innovation Investment or the current grant could be extended. Funding could come from the provincial or federal governments and from private companies. Given the right market and economic conditions, banks can be a source of funding. The correct advertisement of a business plan by the promoter(s) can also obtain sources of funding.

Individuals who are working at the UBC / Alex Fraser Research Forest may not have adequate experience or time to get this project started. Hiring someone with skills in this area will benefit this project. It may also help in the establishment of a partnership since this person would be qualified to understand the operating functions and goals of both parties. I talked to Don Laslo, Eco-Cedar Product, during my contact calls and he indicated that he may wish to play an active role in this project.[xx] We had a lengthy and interesting conversion. Even if Mr. Laslo is not the correct candidate, I feel someone with a strong background in marketing and wood manufacturing is required to create a sustainable venture.

8.0 CONCLUSION

The UBC / Alex Fraser Research Forest should take the necessary steps to begin processing the small diameter Douglas-fir trees into lamels. The appropriate marketing mix of product, promotion, place, and price will attract companies to establish a partnership. The abundance of small diameter Douglas-fir trees will provide a value-added company with a sustainable resource of Douglas-fir fibre. Companies such as Logsmith Homes Ltd., Chemainus, BC, and Legacy Wood Works Ltd, Okanagan Falls can use lamels to produce hybrid walls for log homes, flooring, and window sashes. Lamels can be manufactured to meet their production specifications and quality standards

The goal for the first 2 years of this project should provide a profit margin of 10-15%, however the main objective is to establish partnerships with companies within the secondary wood industry and to begin harvesting the small diameter trees. The faster this project begins, the sooner the forest can become healthier for the large diameter trees and provide adequate cover and forage for the mule deer. Any delay in the initiation of this project only prolongs this problem.

This marketing strategy will solve this unique business challenge that the UBC / Alex Fraser Research Forest is currently facing. The window, flooring, and log home markets are increasing in market share. The large quantity of small diameter Douglas-fir trees will be a sufficient resource for the production of lamels into hybrid walls for log homes, flooring, and window sashes. Overall this project will be economical and sustainable for all the parties involved.

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