FSP Project Y051218:

Planning Methods to Reduce Costs and Enhance Value Recovery in Sustainably Managed Forests

Technical Report #6:

Exploring New Product Opportunities for Northern British Columbia Forest Products Manufacturers

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Date:
March 30, 2005
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Appendix A. Introduction Script for Aspen Manufacturer’s Telephone Survey
1. Introduction

In the process of implementing Sustainable Forest Management (SFM) practices there have been changes to the profile of logs that are available to manufacturing facilities that depend on log supply from SFM forests. The different types of log profiles that are available have required changes in manufacturing technology and a shift towards increased value-added manufacturing. As part of this shift towards value-added manufacturing companies are investigating strategies that will allow higher value utilization of softwood and hardwood species.

The objective of this portion of the project is to identify new, existing or underdeveloped markets for aspen and spruce products. Additional objectives include determining how manufacturers are currently using aspen or spruce for their products and the identification of potential barriers to entry for new producers.

To carry out market research, a telephone survey of aspen and spruce manufacturers was carried out. The most promising product categories identified in the exploratory market analysis of the current softwood and hardwood markets in North America will guide the focus of the research. Manufacturers who are involved in the production and sale of products in these categories will be the main focus of the survey. In the case of aspen there are very few manufacturers that are listed as producing aspen products, therefore all companies listed as working with aspen were contacted for the survey.

2. Methods

The first step taken to identifying new products for the aspen and spruce resource of northern British Columbia was to hold an informal brainstorming session with wood products faculty and industry experts. The results of the brainstorming session are provided in the results section of this report. A market exploration using primary and secondary economic and industry data sources that focused on the product categories identified in the brainstorming session was carried out.

A telephone survey of North American wood products manufacturers who are currently using aspen and spruce was designed. The sample population for the survey consisted of all manufacturers listed in the Big Book 2004 forest industry directory. Only those manufacturers who listed aspen as a species that they purchased or sold were included in the sample population. Due to the limited number of manufacturers listed as using aspen products all manufacturers were included regardless of the aspen products they manufactured. Several secondary manufacturers of spruce were also contacted from the Big Book 2004. Several larger value-added mills that produce spruce were interviewed. The purpose of the survey is to attempt to gauge the market
potential for aspen and spruce products. The survey was pre-tested by University of British Columbia faculty and industry experts.

By interviewing manufacturers who have experience with marketing aspen and spruce products it is believed that valuable information in terms of barriers to entering the particular product markets can be identified. The successes and failures of current producers can also be used to make strategic decisions in which type of products would be the most likely to succeed for northern wood products producers. A copy of the survey questions is appended to this report.

A total of 162 manufacturers who reported using aspen in the 2004 edition of the Big Book were contacted by mail, 34 spruce manufacturers were also contacted. A cover letter describing the purpose of the survey and a consent form were mailed to each company. The marketing department or management of each company were targeted for the survey. Companies who were later determined to not be producing aspen or spruce, companies that were listed with bad addresses and companies that are no longer in business were removed from the sample population. At this time all interviews are complete, however the analysis of the results is not complete, therefore the final results of the survey are not yet available.

3. Results

The following results are from the brainstorming session held at the University of British Columbia and the resultant market exploration of promising product categories. Preliminary results of the telephone survey are also discussed below.

3.1. Results of Brainstorming Session for New Aspen Products

Market segments where aspen might be used as either a replacement material or for an entirely new product were identified in a brainstorming session held in early June 2004. The following categories and associated products were suggested:

- Furniture - pine grain stamped for external use, cabinetry, composites, edge glued panels, OSB, small diameter logs
- Housing - moulding, panelling, flooring, saunas, OSB, plywood, lumber, siding, treated logs (log homes)
- Fixtures - movie sets (backgrounds, etc), store fixtures, OSB
- Packaging - excelsior, pallets, fruit/produce boxes, wine crates
- Panels - road underlay
- Exports - raw log exports to US, China
In order to proceed with a study to further research these market segments and product concepts, their potential must be evaluated. A general analysis of recent and current market conditions for Aspen was performed in order to make an initial determination on the feasibility of a market segment or product.

Since there is little data available in the public domain on the use of aspen in the North American forest products industry, statistics and trends for the use of general hardwood species in the segments of interest is used in substitution for aspen.

The majority of the information used to evaluate the feasibility of the market segments and products are from a report generously provided by Chris Gaston of Forintek. The report *An Assessment of Market Opportunities for Western Canadian Aspen* was produced for the Alberta government in July of 2002. Aspen products are separated into two different quality categories, appearance grade aspen and the lower quality low-grade aspen.

### 3.2. Results of Brainstorming Session for New Spruce Products

Market segments where spruce might be used as either a replacement material or for an entirely new product were identified in the brainstorming session held in early June 2004. Participants suggested the following categories and associated products:

- Furniture – load bearing components
- Housing - moulding, millwork, lumber, log home construction and turning squares
- Fixtures – store/home shelving
- Packaging - dunnage, pallets, boxes, caskets
- Panels – edge glued panels

### 3.3. Preliminary Results of Aspen Manufacturer Survey

Of the 162 companies reported to be manufacturing aspen products that were contacted to participate in the survey 29 companies were removed from the sample population due to bad addresses, no longer in business or not involved in the manufacture of aspen products. Of the remaining sample frame of 133 companies 14 agreed to take part in the survey. The response rate is therefore 10.5%, which is acceptable for statistical analysis of results and typical of response rates of wood products industry surveys.
All of the aspen companies that were contacted are located in North America. A majority of respondents are located in the Midwest region of the United States. The majority of Canadian respondents are located in Western Canada.

Preliminary analysis of the qualitative data collected in the survey show that the most important factor in determining the success of a primary aspen manufacturer is having uninterrupted access to a steady supply of good quality aspen logs. Similarly, secondary manufacturers report the inability to find a consistent supply of suitable aspen lumber products to develop a significant market for their aspen products.

The majority of pallet and packaging manufacturers who use aspen have significantly decreased the volume of aspen used in their products due to the lack of availability of heat-treated aspen lumber. Heat-treated lumber is required in any wooden packaging materials that are destined for overseas shipment.

### 3.4. Preliminary Results of Spruce Manufacturer Survey

Of the 34 companies contacted who reported to be manufacturing spruce products in North America 5 respondents agreed to take part in the survey. All companies contacted were eligible to take part in the survey and the response rate is 14.7%.

The spruce manufacturing companies who participated in the survey were from western Canada and one respondent is located in the Eastern United States.

The cost of labour and the continuously increasing cost to ship finished products were cited as the most common factor affecting the success of a company in the value-added spruce market. Secondary manufacturers of spruce products also mentioned competition from overseas competitors such as China and Eastern Europe as one of the largest factors affecting the success of their business. Companies also mentioned the highly competitive nature of the industry as a barrier to entry.

Nearly all respondents said that it was imperative for a company in the value-added spruce market to secure a flexible, knowledgeable and dedicated workforce. Many of the respondents said that they experience large turnover in their workforce and this makes it difficult for them to produce a product with consistent quality.
4. Analyses

Using a combination of the data collected from the primary economic data presented in the results section above and a report prepared by Forintek on the aspen products market in North America the following potential product categories were identified and ranked according to their perceived viability.

4.1. Potential Uses for Appearance Grade Aspen

4.1.1. Solid wood furniture

The furniture industry is the largest potential market for hardwoods in North America in terms of dollar value. Aspen is generally used for the low to medium value range of solid wood home furnishings. Aspen is also used in hidden components of wooden furniture such as drawer components and edge-glued panels for tables. Aspen furniture such as bedside tables are currently available in IKEA outlets in North America.

Studies of Eastern Canadian aspen mill yields suggest that 15% of aspen lumber is #1 common and above. This leaves 85% of the lumber yield that is low quality (Forintek, 2002). A producer of furniture quality aspen components would therefore need to find a steady market for the falldown.

4.1.2. Millwork

The US millwork market segment is one of the top value segments in the forest products industry. The highest volume segments identified by Forintek within the millwork industry for aspen are:

- Mouldings, both solid and finger-joint
- Panelling for walls and ceilings
- Kitchen and bathroom cabinets
- Door core material
- Interior fascia and stair components
The chart above shows a trend of continued growth in global imports to the US of hardwood carpentry materials related to the millwork category. In 2003 imports of these combined hardwood products were equivalent to nearly $900 million US (figure 1). Aspen currently has an insignificant share of the millwork market segment. Interviews of producers and distributors of aspen by Forintek indicated that mouldings were the largest sector where aspen is currently used.

4.1.3. Edge-glued panels

Edge-glued panels are an option for higher quality appearance grade aspen components. Edge-glued panels are currently used in furniture production and the do-it-yourself (DIY) market. There are smaller markets for edge-glued panels in low cost caskets used as inserts into higher quality caskets that are rented for funeral services. Other markets such as ski and snowboard components are less viable since the cost of using more readily available wood products does not make aspen a significant cost saving alternative.
4.1.4. Veneer and Plywood

Currently, aspen veneer and plywood have an insignificant share of the veneer and plywood market. There could be a demand for these products if there were a steady and stable supply of aspen veneer. Aspen’s lightweight, unique colour and dimensional stability could result in a niche for aspen veneer and plywood in the US. Washington and Oregon have lay-up plants that currently use aspen as a core material. There are also plants in Eastern Canada and the Eastern States that could potentially use aspen for plywood. Aspen veneer is suitable for core material and also for hardwood plywood face material.

Figure 2.

Hardwood plywood and veneer imports to the US continue to grow. It may be difficult to convince consumers of plywood and veneer to accept new aspen products in this category. Significant marketing would likely be required before the share of aspen in this market increased (Forintek, 2002).
4.2. Potential Uses for Low-Grade Aspen:

4.2.1. Aspen Dimension and Stud Lumber

The market for dimension and stud aspen lumber is large enough to absorb any Western Canadian production according to the Forintek report. The trend in Figure 3 shows that imports of hardwood lumber to the US have been increasing significantly over the last decade. Canada’s share of exports of hardwood lumber to the US continues to increase at roughly the same pace as global imports.

![Figure 3: Total Global Hardwood Lumber Imports to U.S. with Canadian Share](image)

Duties on softwood lumber shipped to the US make aspen lumber competitive cost wise with Canadian SPF lumber. Aspen dimension and stud lumber could use wood that is not appearance grade. The production of sufficient quantities of aspen lumber is contingent on an adequate supply of suitable aspen logs. In order for a company to be successful in the dimension and stud lumber market they must be able to offer a steady supply to their customers who may use other species if supply is not available. This could be problematic for some producers who may not have access to suitable aspen logs.
Another disadvantage of aspen lumber is the difficulty in drying aspen. It typically takes up to three times longer to dry aspen than SPF. There is also a higher percentage drying degrade in aspen compared to SPF (Karaim, 1989).

4.2.2. Pallets and Crating Material

The wooden packaging industry is one of the largest consumers of wood in the US. Aspen presently accounts for less than 3% of the packaging market share in the US. US import data from the last 10 years (figure 4) shows a huge increase in the value of imports of wood packaging products. The lack of a large producer of aspen pallet components in Western Canada makes it difficult for a steady and large supply of aspen to be available to the US pallet industry (Forintek, 2002).

![Figure 4.](image)

The challenges that western Canadian aspen producers face in increasing the use Canadian aspen in the US market are mainly the available supply of suitable aspen logs. There is also a large supply of SPF lumber readily available in western Canada for the US packaging industry which manufacturers may be
more used to working with. This could adversely affect the opportunity for aspen in this product category. The success of Aspen in this market could be adversely affected by regulations currently being developed by the International Plant Protection Convention (IIPC) to require exported lumber used for packaging to be certified pest free. This would require wood packaging component manufacturers to dry or fumigate any wood exported to the US.

4.2.3. Other Uses

Aspen could potentially be used in the following limited markets: landscape ties, log home cants and finger joint blocks. These markets are limited and may not absorb enough lower grade aspen.

4.3. Potential Uses for Appearance Grade Spruce

4.3.1. Furniture Components

Furniture imports of all categories, including metal and upholstered furniture, to the US have increased substantially since 1997. In 2002 US imports of all furniture products reached nearly $18 billion US (figure 5). Institutional and household furniture imports have experienced strong growth while the wooden office furniture and wood cabinets category have only experienced moderate growth since 1997.

With recent annual imports of nearly $10 billion US, the institutional furniture market appears to be the most promising category for new spruce products. With a narrowing of the difference between imports of wood household furniture and metal furniture products since 1997 there may also be further opportunity for spruce household furniture components.
4.3.2. Millwork

US imports of softwood millwork products such as mouldings and door and window frames have seen a large increase over the past decade. The combined value of 2003 imports of softwood door and window frames and mouldings was over $1 billion US. Compared to combined imports of around $300 million in 1994 this represents a three-fold increase in import value over one decade (see figure 6).

Though it is not known what percentage of spruce makes up imports in the millwork category, if imports in millwork products continue to rise at a similar pace to that of the last ten years there should be some potential for spruce millwork products.
4.3.3. Panels

Specific data on spruce panel exports to the US were not available. In lieu of that information statistics for softwood plywood, OSB, MDF and veneer are used to evaluate the potential for spruce panels.

Higher quality small diameter spruce lumber could be used for the edge-glued panelling market. As with aspen, spruce panels are sometimes used in low cost casket construction but are more frequently used in the furniture industry.
Since 1998 there has been a three-fold increase in value of global imports of softwood MDF, veneer and plywood into the US. The value of imports of these three softwood products was approximately $750 million US in 2003 (figure 7). If housing construction starts and home renovations and DIY sales maintain their current level of sales, this market could be a significant opportunity for softwood producers. As with sales of spruce dimension lumber and studs the panelling market could fluctuate with any significant changes in the US economy. This market warrants further consideration for spruce products.

Figure 7.
4.3.4. Fixtures for Home and Commercial Use

Figure 8.

The commercial fixtures category includes store shelving, showcases, partitions and storage lockers. This product category was worth nearly $2.5 billion US in 2002 (figure 8). Data for commercial fixture imports are not broken down by material, regardless this is a large and valuable category that may have the potential to absorb new spruce products.

4.4. Potential Uses for Low-Grade Spruce

4.4.1. Packaging Material

Wood packing material including pallets, boxes, crating and excelsior has seen a massive increase in global imports to the US in recent years. Over the past six years US imports have roughly averaged around $155 million US per year (figure 9). Compared to imports of roughly $20 million US in 1995 the US has seen imports rise nearly 8 times in as many years. The wood packaging
market may provide opportunities for softwood producers to market lower quality wood.

SPF has historically been the material of choice for pallet manufacturing in the Western US and Canada due to the steady supply of softwood in this region. With the possibility of all lumber exports to the US being required to be certified pest free by the IIPC spruce could be favourably positioned to take advantage of the lower cost of drying than that of hardwoods. In order to be certified pest free wood products would have to be dried to specified moisture contents. Since it is often cheaper and easier to kiln-dry softwoods than hardwood softwoods may see an advantage in packaging markets that have historically used hardwoods if these regulations come into effect.

Figure 9.

4.4.2. Stud and Dimension Lumber

The import values of softwood lumber have fallen considerably since the late 1980’s and mid 1990’s (figure 10). Spruce lumber imports are about one third the value in recent years compared to the 1990’s. Continued tariffs on Canadian exports of softwood lumber to the US offer US producers economic advantages, although the efficiency of Canadian softwood mills has allowed them to remain competitive.
The softwood lumber market is also susceptible to changes in the US economy and housing starts. Declines in housing starts in the US would further adversely affect the value of Canadian softwood exports.

Figure 10.

5. Conclusions

The purpose of this report is to identify the aspen and spruce products or product segments that merit further research. Forintek rated the potential of most of the categories of aspen products that were identified in the new products brainstorming session. Categories of interest for spruce products were rated on the basis of market value and recent growth of the market segment. Product categories are divided into appearance grade and knotty grades:

5.1. Aspen appearance grade:

- edge-glued panels  Potential  Moderate
- furniture components  Moderate
- millwork components  Low
• veneer and plywood  
• other products  
High  
Low

5.2.  **Low-grade aspen:**

• pallets and packaging  
• stud lumber  
• dimension lumber  
• landscape ties  
• other low-grade products  
Potential  
High  
High  
Limited  
Limited

5.3.  **Spruce appearance grade:**

• panels  
• furniture components  
• millwork components  
• veneer and plywood  
• commercial fixtures  
Potential  
Moderate  
High  
Moderate  
Moderate  
High

5.4.  **Low-grade spruce:**

• pallets and packaging  
• stud lumber  
• dimension lumber  
Potential  
High  
Low  
Low

6.  **Literature**


7. Appendix A. Introduction Script for Aspen Manufacturer’s Telephone Survey

Thank you for taking the time to respond to this survey. Before we begin the survey there are some important details that you should be aware of. Firstly this research is being conducted through the Forestry Department of the University of British Columbia. We are undertaking this study to identify current and future uses for aspen in North America. We are also interested in identifying issues that manufacturers of aspen have had to face in terms of market acceptance of aspen. This research is of particular interest to communities who are seeking opportunities to increase natural resource based employment.

The types of questions that will be asked are designed to provide a composite of the different companies that are currently working with aspen in North America. These will be general questions used to characterize the size and scope of your business operations. We will also ask questions to illustrate your company’s experience in working with aspen. The survey will take approximately 20 to 25 minutes.

I would also like to assure you that all information that you provide will remain anonymous and confidential and your company will not be identified in any way in the results of the survey. You should also be aware that you have the right to refuse to answer any question during the course of the survey.

I would also like to let you know that if you would like a copy of the survey results they will be mailed to you free of charge. Do you have any questions before we proceed with the survey? If you are willing to proceed with the survey we will start now.
Q – 1 I would like to begin by asking you what position you hold with your company?

Q – 2 Is your company an independent manufacturer or part of a multi-facility company:

INDEPENDENT

MULTI-FACILITY

If company is part of a multi-facility company read following passage to respondent:

If your plant is a division of a larger company please answer the remaining questions for only your division.

Q – 3 Is your company a primary manufacturer (do you process raw logs) or a secondary manufacturer (do you only process rough or finished lumber):

PRIMARY
SECONDARY
BOTH

Q – 4 How many people does your company currently employ?
Q – 5 What is the projected total production volume of all species for your company in 2004?

Q – 6 What is the projected total production volume of aspen for your company in 2004?

Q – 7 What types of products, aside from aspen, does your facility currently produce?

Q – 8 What types of aspen products does your company produce?

Q – 9 What prices are your company’s most popular aspen products currently commanding?

Q – 10 What is the approximate percentage of your company’s sales that are generated by aspen?

__________ %
Q – 11 For approximately how long has your company been manufacturing aspen products?

Q – 12 Has the volume of aspen products that your company produces changed since you started working with aspen? Please give a percentage value to any change in production.

  INCREASED ____________%

  DECREASED___________%

Q – 13 IF RESPONDENT IS INVOLVED IN PRIMARY PRODUCTION ASK THE FOLLOWING QUESTION:

  What would you estimate is the average rough, green grade output from aspen logs processed at your facility?

ELSE ASK THE FOLLOWING QUESTION:

What are the grades and dimensions of aspen that you most commonly use in your manufacturing process?

Q – 14 IF RESPONDENT IS A PRIMARY MANUFACTURER ASK THE FOLLOWING QUESTION:
Could you please estimate the grades of aspen logs that your company currently consumes?

F1_____%
F2_____%
F3_____%

Q – 15 What is the primary source of your aspen raw material?

Q – 16 By approximately how many percentage points has demand for your aspen products changed over the past 3 years?

INCREASED ______%

DECREASED ______%

Q – 17 By approximately how many percentage points have prices for your aspen products changed over the past three years?

INCREASED ______%

DECREASED ______%

Q – 18 What are the main geographic markets that your company produces wood products for? Please answer this question for all species.
Q – 19 What are the main geographic markets that your company produces aspen products for?

Q – 20 Which retailers or distributors does your company produce aspen products for?

I would now like to ask you a few open-ended questions. Please feel free to give, as much information as you feel is necessary to properly answer these questions.

Q – 21 What would you identify as the most important factors that a company should consider before entering the aspen product market?

Q – 22 What is the largest obstacle that your company faces in producing and marketing aspen products?

Q – 23 Would you be willing to share some of the experiences that your company has had with processing aspen?
Q – 24 What are some of the positive experiences that your company has had with aspen in general?

Q – 25 What are some of the negative experiences that your company has had with aspen in general?

Q – 26 What type of feedback do you receive from your customers who purchase your aspen products?

Q – 27 Do you believe that your customers would be willing to use more aspen if it were available?

This completes the questionnaire. I would like to thank you for taking part in this survey. As I mentioned earlier if you would like a copy of the results of this survey they will be mailed to you free of charge. If you would like to have a copy could you please confirm your mailing address?