

STRATEGIC ANALYSIS OF INTERNATIONAL FOREST PRODUCTS LIMITED

by

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ABSTRACT

International Forest Products Limited is a sawmilling company that produces softwood lumber for sale in domestic and international markets including the United States and Japan. Production facilities located in British Columbia, Washington and Oregon produce nearly 1.5 billion board feet of lumber annually. Timber is secured through Crown forest tenure holdings and external open market purchases. This paper includes: a strategic analysis of the firm; an industry analysis; a strategic fit analysis; a value chain discussion; and a financial review. Seven areas of improvement are discussed including: manufacturing investments; use of debt; labour costs; logging costs; coastal supply chain management; marketing and brand management; and market diversification efforts. The goal of this analysis is to provide strategic recommendations for the company that will result in improved profitability, consistent earnings and a higher degree of reinforcing activities between business units.

DEDICATION

To my wife, children, family and friends, you have provided me with incessant support and comfort throughout this difficult journey. Without your love, I would have fallen apart.

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I would like to thank Ed Bukszar, Ph.D. for his hours of guidance and tolerance as we worked through this project. His expectations of my work drove me late into the night far too many times. Thanks Ed.

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1 PRODUCTS, MARKETS AND OVERVIEW OF THE FIRM

1.1 Description of the Organization

International Forest Products Limited is a sawmilling company that produces lumber products for sale in various markets internationally. The company has sawmill and other value-added operations in the Province of British Columbia, Washington State and Oregon State and produces nearly 1.5 billion board feet of softwood lumber annually. Of this capacity, 56% is produced in British Columbia's coastal region, 18% in the British Columbia interior region and 26% in the United States Pacific Northwest. Interfor sells dimension and specialty lumber products to markets in the US, Canada, Japan, the UK and Europe. Sawmills are supplied with timber from the company's Crown tenures and through open market harvesting and purchases. In 2004, Interfor had annual sales of \$833 million. Over the last 5 years, sales have ranged between \$639 million and \$833 million.¹

International Forest Products began in the 1930's with a single sawmill and was legally incorporated in the Province of British Columbia in 1963. The company has grown through investments in assets, asset improvements and acquisition of other forest products firms. Recent acquisitions include the purchase of Primex Forest Products in 2001, the purchase of the sawmill and related assets of Crown Pacific Partners in 2004, and the purchase of Foragon Forest Products in 2005. Lumber production capacity has increased from 693 million board feet in 1993² to 1,490 million board feet in 2005.³

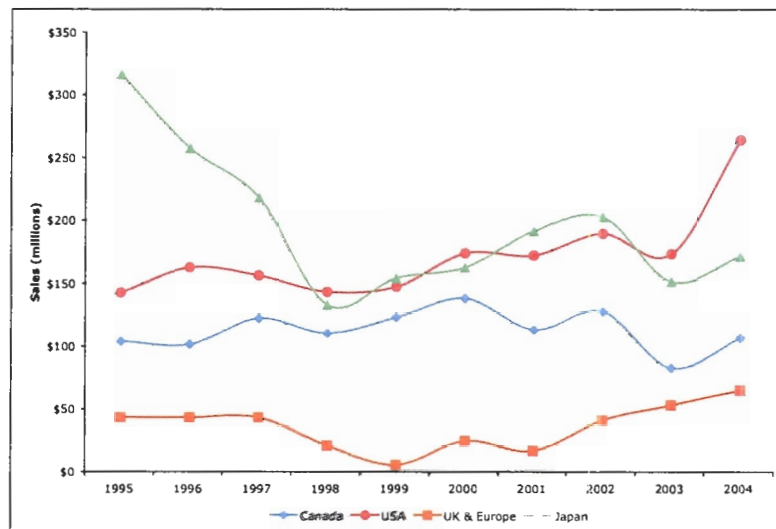
Interfor is a public company whose shares trade on the Toronto Stock Exchange. William L. Sauder, through his family holding company Mountclair Investment Corporation, has a

controlling interest in the company. Mr. Sauder also owns Sauder Industries Limited, a privately held diversified forest products firm that produces value-added wood products for the North American market.

1.2 Product Offerings and Target Markets

The company produces lumber products for a variety of global markets. To diversify product offerings, the company operates nine sawmills and four re-manufacturing operations, each of which is tooled differently to produce a specific set of lumber products. The products vary from structural dimension lumber for the North American market to specialty products such as house siding and decking materials. The company's major target markets are the United States and Japan, whose combined revenues account for over 70% of the company's 2004 total revenues.⁴ Other markets include domestic sales in Canada and offshore sales in the U.K., Europe, Asia and Australia (Figure 1).

Figure 1: Company Sales by Country



Source: Author; from data in 1997-2004 International Forest Products Annual Reports

The company's lumber offerings are mostly homogenous, un-differentiated products. The North American dimension products are homogenous products consisting of the familiar 2x4, 2x6, ... 2x12 family of SPF lumber. These products are commodity priced. On the opposite end of the spectrum, the cedar products are differentiated products consisting of a variety of appearance grade, high value offerings. These products include clear and knotty exterior decking, clear and finger jointed residential siding and special appearance grade timber and fascia products. The company operates three distinct sales and marketing groups that focus efforts on their respective target markets.

In the North American market, the company focuses on the new home market, selling direct to large contractors, wholesalers and distributors. Structural products are commodities and firms compete mostly on price, quality and service. The United States is a very large market for softwood lumber, consuming 56 billion board feet in 2004. With shipments of approximately 400 million board feet in 2004⁵, Interfor has less than 1% of the market share. The US market has been growing strong with housing starts near all time record highs. This demand for forest products has driven prices up, making the US an attractive market for lumber producers.

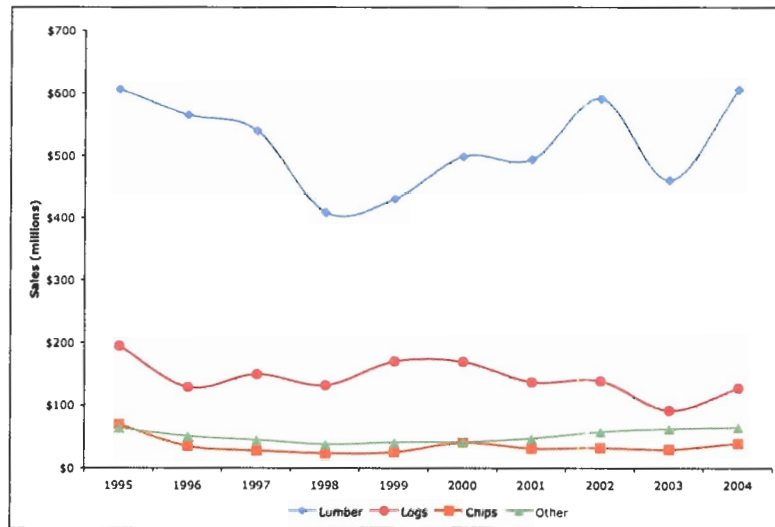
The company's second major market is the Pacific Rim. Japan is the single largest market in this region and has been a main focus of Interfor's sales in past years. In 2004, Interfor had sales of \$170 million in Japan.⁶ The Japan consumer has a strong appetite for traditional lumber homes that require large volumes of lumber in their construction. A traditional Japanese Zairai home is a post and beam home that requires 8 times the lumber used in a standard North American home. In the past, these homes were built with high quality lumber and consumers were willing to pay a premium for this quality. However, since the Great Hanshin earthquake of 1995 and the Asian economic crisis of 1997, the market has changed causing the company and other coastal firms to adjust the marketing strategy in the region. In 2002, the Japan market was 3.3 billion board feet, of which coastal firms held a 26% share.⁷

Interfor has historically sold high value lumber to smaller markets willing to pay for high quality products. In the 10 years preceding 2004, the company sold an average of 643 million board feet for approximately \$781 per million.⁸ During this period, the company focused on a core business of milling high value coastal products for high value markets. In 2004, in a movement towards diversification, the company purchased sawmills in the Pacific Northwest that produce larger volumes of lower value North American dimension lumber. The diversification away from high value lumber reduces risk caused by market dependency and price volatility, but also lowers the overall average selling price of goods sold. In 2004, Interfor sold 894 million board feet for approximately \$630 per million.⁹

Lumber dominates the company's product line, though it also earns revenue from the sale of logs, chips, and other services (Figure 2). In 2004, lumber accounted for 73% of revenues while log and chip revenues were 15% and 5% respectively.¹⁰ Log sales are generated from the trading of logs harvested on the company's forest tenures but not sawn internally. For example, the company sells cedar shingle logs to other firms because it does not have a shake and shingle mill. Other logs of different species and quality are also sold to outside companies. The health of external markets affects the company's revenues and during strong markets, external log sales can represent upwards of 20% of total annual revenues.

The company produces chips as a by-product of the lumber manufacturing process. The BC sawmills have the capacity to produce 550,000 volumetric units of chips annually¹¹, all of which are sold to coastal pulp producers through a variety of short and long term agreements. Similarly, the US sawmills sell chips to pulp and fibreboard producers on short-term contracts.

Figure 2: Sales by product line



Source: Author; from data in 1997-2004 International Forest Products Annual Reports

1.3 Focus of the Analysis

The purpose of this analysis is to assess the strategic positioning of International Forest Products in the global market place, discuss strategic issues and make recommendations for the future. The analysis will consist of an industry analysis and an internal analysis, including a value chain and strategic fit discussion.

The subject industry of this analysis is the global softwood lumber products industry. This industry is the prime focus of the company. The company's competitors are international in nature, ranging from fellow producers in BC, to national competitors in other Canadian Provinces, and to international competitors in Europe, Scandinavia and Southern Hemisphere countries including New Zealand, Chile and Brazil.

2 INDUSTRY ANALYSIS

The following is a summary chart of each of the factors and the variables that have been used to characterize the five competitive forces for the global softwood forest products industry (Figure 3).

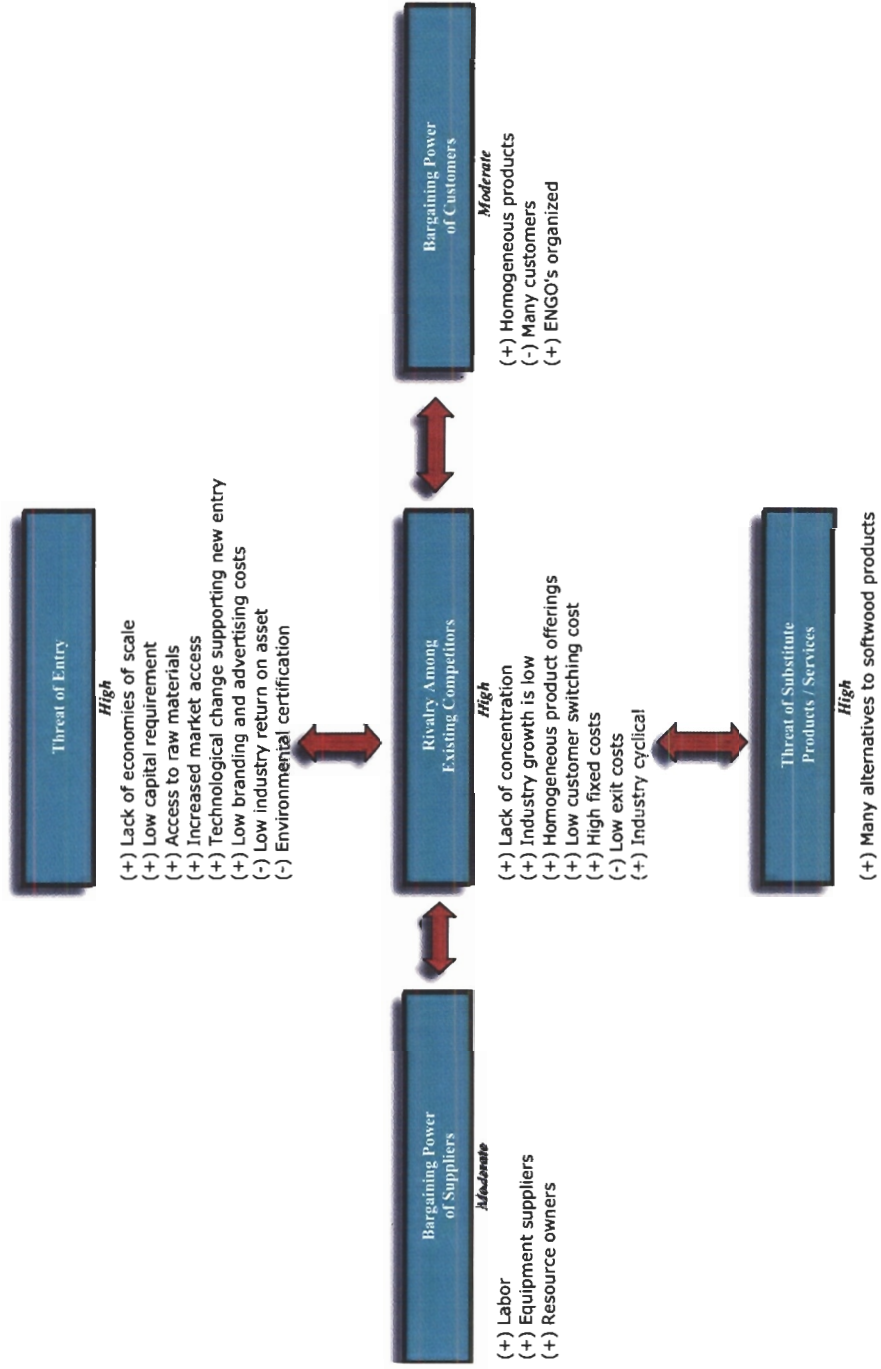
2.1 Rivalry among Existing Competitors

Rivalry among industry firms is high. The industry exhibits high fixed costs, low concentration and low growth. The homogenous nature of the products, coupled with low customer switching costs creates a situation where firms aggressively compete on price. The cyclical nature of markets compounds firm rivalry as firms compete for market share and customer retention during periods of soft demand.

2.1.1 Lack of concentration (+)

There are many competitors in the industry and supply comes from many regions of the world, with Europe, Canada and the United States leading in softwood lumber production. In 2004, total North American softwood lumber production was 73.7 billion board feet. The top 30 producers accounted for 59% of this production in 323 sawmills across Canada and the United States, with mills producing an average of 134 million board feet annually.¹² Rivalry is increased when many competitors have production facilities nearly equal in size.

Figure 3: Five-Forces Diagram



2.1.2 Industry growth low (+)

Industry growth has been slow for many years. Demand for softwood lumber increased to 124 billion board feet in 2004, an increase of 2.4% over 2003. In 1994, global softwood consumption was around 113 billion board feet, growing to about 116 billion board feet in 1999; a 5-year growth rate of only 1.4%. Global demand in 2005 is expected to remain flat as North America and Japan consumption lessens.¹³ Slow industry growth increases rivalry among existing firms, as industry firms compete for the market share of other firms.

2.1.3 Homogeneous product offering (+)

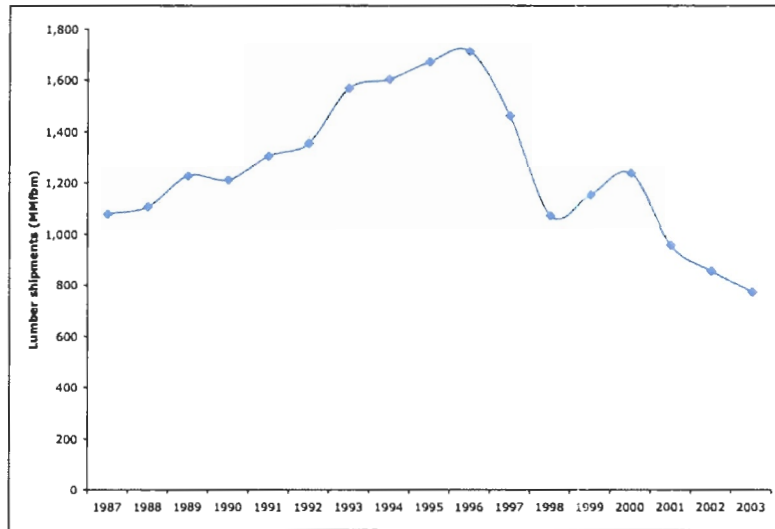
Most softwood lumber products are commodities. As such, firms are price takers and to remain competitive, firms must be efficient, low cost producers. Achieving low total costs requires balancing the cost of raw material against the conversion cost in the sawmill. Globally, different regions have different mixes of these two core costs. Firms with inherently low fibre costs can pay more for manufacturing while maintaining a competitive rate. Similarly, firms with low sawmill costs can pay more for fibre costs. Uncompetitive firms have high fibre costs and high conversion costs. Firms gain cost advantages in a variety of unique ways including transportation and distribution methods, labour costs and energy costs.

2.1.4 Low customer switching cost (+)

The homogenous nature of lumber products makes it easy for competitors to attack another firm's market position. An example of this is the BC Coastal producers loss of market share in Japan in the mid 1990s. The needs of Japanese customers changed during this period, and coastal producers failed to quickly react, giving European and Scandinavian firms the market opportunity. In the end, Japanese customers switched suppliers. The company's shipments to Japan declined as the competing products captured market share. Wood consumption in Japan

decreased slightly as the economy recessed, but shipments from BC Coastal regions declined far more than can be attributed to the recession, indicating a fundamental loss of market share (Figure 4).

Figure 4: BC Coastal Shipments to Japan



Source: Author: adapted from data from Coast Forest Products Association¹⁴

2.1.5 High fixed costs (+)

When an industry has high fixed costs, firms have larger incentives to produce when demand weakens, following the economic principle that in the short run, firms should produce when price is greater than the average variable cost. This rule assumes that the firm's fixed costs represent the maximum loss that the firm needs to absorb if it produces nothing. Also, when fixed costs are high, this maximum loss is large and anything that the firm can do to reduce the loss is warranted.

The softwood lumber industry has high fixed costs. Individual sawmills cost about \$50 million in plant, property and equipment costs and require routine capital investments after the initial capital outlay. Sawmills are specialized assets that cannot be easily converted to produce alternate products.

Industry firms may also have high fixed costs in logging property and equipment if they own their own fibre sources. Some firms own the forestland outright, while others operate on public land through a variety of short and long-term contracts. Other producers only buy on the open market, avoiding the potential drawbacks of vertical integration into woodland operations, but accepting in exchange the risk of paying market price for logs and the risk of loss of production if fibre becomes unavailable. These producers gain from lower capital investment but must invest time and effort into co-operative partnerships to gain supply security and reduce the risk of running out of raw materials.

The United States – Canada trade dispute increases fixed costs for Canadian producers. The tariff battle has been ongoing between the two countries for many years with the most recent conflict heating up in March 2001 when the 5-year Softwood Lumber Agreement expired. The agreement was a quota-based system that restricted imports into the US. Since this time, Canadian producers have been paying a countervailing duty and antidumping duty of around 27% to US producers. The tariff has the effect of lowering contribution rates. The net effect is that producers must increase production to account for lower contribution rates to cover fixed costs, driving up output. In fact, British Columbia shipped 28% more lumber to the US in 2004 than in 2001.¹⁵¹⁶

2.1.6 Exit costs (-)

Firms in the industry have low exit costs. Even though there are high fixed costs and specialized assets, it is relatively easy to exit by selling to other firms. With low industry growth, firms are aggressively pursuing merger and acquisitions to achieve revenue growth and scale. The BC industry is currently going through a period of consolidation.

2.1.7 Industry cyclical (+)

The softwood lumber industry is very cyclical in nature. Softwood lumber consumption is tightly correlated to the overall strength of the economy being sold into. In a strong economy, consumers have high confidence and residential housing starts increase. New housing starts increase the demand for softwood lumber, the industry earns reasonable profits and expands capacity and fixed costs. During periods of recession, consumer confidence is low and housing starts decline. In these periods, firms continue producing in attempt to cover fixed costs, resulting in low revenues and large financial losses. For example, in 1990 and 1991, the US and Canadian economies experienced a recession. Compounding this situation was a global economy that paused as the first war in Iraq caused major global economic unrest. US housing starts bottomed out at 1 million starts, declining from over 1.5 million starts in 1987. Japan housing starts dropped to about 1.3 million starts from 1.7 million the previous year. BC forest industry firms subsequently lost nearly \$1 billion in that period.¹⁷

2.2 Threat of New Entrants

The threat of new entrants in the industry is high. An important success factor in this industry is low cost. If companies can secure access to raw material that is low cost and they can achieve low conversion cost, they can compete in the market. New entrants that employ new technology gain immediate cost advantages over incumbent firms. Market entry does not require large economies of scale and access to raw material is not a significant barrier to entry. Access to market is improving as new distribution channels are developed and low branding costs enable new entrants.

2.2.1 Lack of economies of scale (+)

There are few economies of scale that prevent new entrants into industry. As of 2003, the 17 largest firms, defined as those producing over 1 billion board feet of lumber, produced only

22% of the world's softwood lumber.¹⁸ The smallest company on this list has only 6 sawmills, leaving 78% of the global softwood production in the hands of small producers that have 5 or fewer sawmills. This indicates that large firms do not dominate the industry and new entrants are not faced with achieving large scales of production to compete successfully.

2.2.2 Low capital requirements (+)

Firms in the industry have significant capital investment in specialized assets, but this creates only a modest barrier to entry for new entrants. It costs around \$50 million to build or purchase a new sawmill including the cost of plant, property and equipment. New entrants are using strategies such as locating plants in favourable jurisdictions and entering lease agreements for everything from the land the plant rests on to the contracting out of dedicated heavy onsite equipment. These strategies minimize the capital outlay required to enter the industry and provide immediate cost advantages to new entrants that incumbent firms may not have.

2.2.3 Access to raw materials (+)

Access to raw material in Canada does not act as a significant barrier to entry. Provincial and federal governments own over 94% of the forestland in Canada, leaving only 6% privately owned.¹⁹ The governments manage the land and have the mandate to set the legislation, regulation and policies that govern business on those lands. This mandate includes deciding how access to the timber is divided among interested parties. Typically, the provinces provide access through three different avenues: area based tenures; volume based tenures; and short-term tenures.

Area based and volume based tenures are typically medium to long term, generally ranging between 15 and 20 years, renewable in 5 year increments. These tenures provide long-term security to large forest product firms. In British Columbia, about 80% of the annual harvest comes from long-term tenures; in 2002 the total volume off these tenures was 50.3 million cubic

metres.²⁰ Long-term tenure holders generally have substantial forest management obligations that include sustainable resource planning, operational planning, forest operations and forest regeneration and are required to perform these obligations in compliance with the laws set by government. These activities are capital intensive and increase the complexity of managing the entire firm.

Short-term tenures are 1-5 year agreements that mainly cover specific volumes of timber from defined forest areas. Typically, government carries the forest management obligations and the agreement holder is only responsible for the harvesting performance obligations. In British Columbia, around 20% of the annual harvest is carried out under these tenures; in 2002 this harvest amounted to 10.4 million cubic metres of timber.²¹ Short-term tenures are accessible to any party with the capacity to perform the contract obligations. It is these agreements that lessen entry barriers to new firms in Canada. New entrants can gain direct access to the raw material by competing in the bidding processes made available by government and softwood logs from these sales are generally available on the open market, as many individuals do not own manufacturing facilities. Also, firms in the industry typically trade log packages with other firms to get the desired log type the works best in their particular facility. Raw materials in Canada are not severely constrained making it easier for new entrants to the industry.

In the United States, the forest tenure system is vastly different from the Canadian system. Most of the land in the US is privately held by a large number of small owners; only a small portion is publicly owned. The private lands account for upwards of 80% of the round wood supply²² available to lumber manufacturers, causing the US industry to behave differently from the Canadian industry. Most private landowners are small parties that are not committed to manufacturers, creating a dynamic where the highest price offered for logs will secure a new firm's fibre. This dynamic favours new entrants that are able to pay more for logs; a situation

common when new entrants employ new manufacturing technology or place plants in strategic locations that provide immediate cost advantages to the firm.

Globally, there are many sources of raw material available to new entrants. Sources of new softwood fibre include the plantations coming to maturity in Southern Hemisphere countries and new sources in emerging countries. For example, organization of the Russian resources will result in new fibre supply for new entrants not previously available in the market. The Russian government is expected to bring into force new forest legislation that will be used to give forest companies long term forest leases providing companies with the security needed to make the financial investments in new sawmills in the region. The exporting of logs from Russia will also be a source of fibre for Japanese, Chinese, Korean and US producers. Many companies are willing to pay large premiums for top quality logs and in China's case, low labour costs make manufacturing inexpensive, allowing the firms to pay even higher prices for open market logs.

2.2.4 Access to markets (+)

As the world economy grows stronger and trade barriers are reduced, international access to lumber markets becomes less and less a barrier to new entrants as it becomes easier for firms to sell their products globally. Trade of forest products is already a significant part of global trade activity. In addition, most forest products are commodity goods with near perfect competition and therefore, new firms that are cost competitive should have little problem selling their products.

Trade barriers such as the current anti-dumping tariffs imposed by the US on Canadian producers continues to strain free trade between the two countries, but in this context, it is more of a cost driver, than it is a barrier to new entrants. Because the tariffs are generally applied equally to all Canadian firms, those that have lower costs before tariff are better able to compete than those with higher costs before the tariff. It also gives global competitors a cost advantage, as

their products do not face the same tariffs Canadian firms face. Further, it encourages Canadian firms to sell products in other countries, resulting in increased distribution costs.

2.2.5 Technology changes support new entries (+)

New entrants that enter the market fresh and build their assets from the ground up have the benefit of acquiring sawmills with new high speed technology that converts logs into lumber at very efficient rates. Use of new technology gives new entrants an advantage over incumbent firms that employ older sawmill technologies. Key new entrants in the softwood lumber industry are firms from Southern Hemisphere countries that are harvesting plantation-grown pine in countries such as South Africa, New Zealand and Chile. Firms in these countries have built modern, high efficiency sawmills that have much lower costs than the older mills in traditional lumber producing countries. These regions also benefit from low labour costs. It is expected that pine lumber exports from Southern Hemisphere countries will double from 2002 to 2020.²³

2.2.6 Low branding and advertising costs (+)

High product differentiation and brand loyalty create barriers to entry in industries that produce products with these traits, as new firms must overcome the brand awareness and the customer comfort with the incumbent products. Forest product differentiation and brand loyalty is relatively low, making the industry attractive for new firms, as high upfront costs in marketing are not required to gain market share. Most forest products firms attempt to differentiate their product on service, quality and environmental ethics, but customers can be easily enticed into trying a new product if the cost is lower. As such, the value of product differentiation is minimal in the industry. Many companies market products under a family brand name, typically that of the company name. Family brands are a low cost way to create a product identity that can be easily recognized by customers.

2.2.7 Industry return on asset (-)

The forest products industry has had low profits and low return on capital over recent years. PriceWaterhouseCoopers reported in its 2004 Global Forest and Paper Industry Survey that less than 20% of the companies surveyed achieved return on capital rates of more than 10%.²⁴ Poor industry performance deters new entrants from the industry because investors put new money into other investments where returns are larger.

2.2.8 Environmental Certification (-)

The increasing requirement for voluntary forest certification reduces the threat of entry. New entrants need to front the cost of receiving certification before they sell their products in the market.

2.3 Bargaining Power of Suppliers

There is a moderate level of supplier power that reduces the attractiveness of the industry. Labour costs in the BC Coastal region have been high and the labour movement has been organized, leading to a degree of labour power. Equipment suppliers have more power than the forest product firms because they are more concentrated than producers are themselves, and the firms have limited ability to pass on costs to the customers. Also, the Province exhibits power over producers that detract from industry attractiveness.

2.3.1 Labour (+)

The labour force is a powerful supplier at the provincial and national level, but not at the international level. In the province of BC, a large portion of the labour is organized under the United Steelworkers of America, Canada's largest private sector union. USWA members have kept labour rates high and have been generally inflexible when it comes to the changing needs of industry. High costs and labour disruptions have added to the total cost incurred in the BC

Coastal region over recent years. At the international level, the labour force is not as powerful a supplier to the industry. Many regions have low cost labour that allows firms in those regions to compete in the global market. The Southern Hemisphere countries of Chile, New Zealand and Brazil lead the industry in low labour costs. Although Canadian and BC labour have begun to recognize the need to negotiate more flexibility into the labour contracts, there is more work needed to make the Coastal industry competitive.

2.3.2 Equipment suppliers (+)

Equipment suppliers such as Caterpillar, John Deere and Komatsu have bargaining power in the forest industry. They are more concentrated than the industry is itself and the forest products industry only represents a portion of their overall sales. Equipment suppliers can increase costs to the industry that the forest industry cannot pass on to their customers. A good example of this is the recent increase in commodity steel prices. Because steel represents a significant portion of Caterpillar's cost to build equipment, they pass the cost increase of steel to the forest industry through an increase in the purchase price of the equipment. The forest products firm is forced to absorb this cost into its cost structure because as a commodity producer competing on price, it has limited ability to increase the price to the customer.

2.3.3 Resource owners (+)

Where governments or private firms hold rights over the timber resource but do not have processing facilities, they are considered a powerful supplier to the industry. In Canada where the Crown owns the majority of forest resources, the government has the ability to charge prices for the timber that may constrict a firm's ability to earn profits. The government can also exert indirect costs onto the industry by enacting legislation that increases costs by requiring certain levels of environmental performance or by passing costs down to industry that otherwise should be born by government. For example, both industrial users and the public use forest roads to

access to communities, recreation resources and industrial sites, yet in many cases, the industrial users bare the full cost of construction, maintenance and repair. This downloading of cost increases the cost of production and reduces competitiveness.

2.4 Bargaining Power of Customers

The bargaining power of customers is moderate. The homogenous nature of the goods makes substitution easy, giving power to the customer. Organized environmental groups complicate the producer/customer relationship, ultimately adding strength to the customers' power. Keeping customer power in check is the fact that there are many customers in the market and they are not consolidated.

2.4.1 Homogenous products (+)

The structural and industrial products produced by industry are homogenous, consistent and easily substitutable with products from other firms. At the international level, lumber products vary by quality, strength and durability as the tree species used in the production result in variations in the products. However, in the context of the competitive forces, customers can always find alternate producers of the lumber that they desire. Customers can exhibit price, quality or service demands onto companies that can result in lower profits. An example of this is Home Depot. They use the large volume purchases to push suppliers into producing lifts of structural lumber that are higher in visual quality without paying a premium for the extra quality.

2.4.2 Many customers (-)

There are many customers in the industry. In general, customers include box store retailers, regional retailers, wholesalers and distributors, large builders and contractors, and secondary industrial manufacturers. Some customers are large and organized such as Home Depot and Lowe's. There are also many small customers that skip the retailers and purchase

lumber at regional distribution yards or purchase directly from sawmills. As the industry competes on cost, the firms are not selective on which customers they sell to and the distribution method depends on the marketing and sales capacities of the mill. If mills wish to minimize effort on sales, they can move product through wholesalers and distributors. New entrants can tap into these distribution channels easily if they are low cost producers. In this sense, the customers are not considered powerful in the industry.

2.4.3 Environmental groups organized (+)

Compounding the fact that buyers such as Home Depot are large and organized, is the fact that they are subject to influence by the environmental groups. These groups move their platforms forward by threatening retailers with active protest if they do not conform to their wishes. By conforming to these demands, retailers increase costs to producers by requiring certain levels of environmental performance as a prerequisite to purchasing the company's products. This does not really add power to the customer per se, but the organizational structure of the market creates a situation where third party groups can advance their own agendas by using the power held by the buyers. At global scale, the ability of environmental groups to capture bargaining power of the buyers varies as the organization of retailers and the responsiveness of customers vary.

2.5 Threat of Substitute Products

There is high threat of substitute products in the softwood lumber industry. There are countless examples of alternatives for almost every lumber product offering manufactured by the industry.

2.5.1 Many alternatives to softwood products (+)

Some examples of alternate products include engineered I-Beams (alternates to dimension SPF floor joists), stucco and vinyl siding (alternate to cedar siding) and plastic/wood composite exterior decking (an alternate to traditional cedar decking). Firms that sell substitutes do so by promoting an attractive price-performance trade-off in two ways. They either market their product as superior to the traditional wood product for the relative price charged (typically higher) or they market the product as easier to use than wood products for the relative price (typically cheaper). Concrete decking and concrete siding are examples of higher cost, more durable substitutes to cedar decking and cedar siding. Vinyl siding is an example of a cheaper alternate product.

Alternatives also come from within the industry itself. One of the Coast's staple products in the Japanese market used to be solid, 10"x10" Fir Hira-kaku square posts. These posts had special spiritual value for the homeowners and they took great pride in the natural beauty of the piece. Consequently they were willing to pay a premium prices for top quality posts. As the Japanese home industry restructured into one that was more mechanized, these posts became less favoured because they were not kiln dried and were subject to some levels of distortion. Scandinavian companies swept in with a glued and dried product comprised of low value internal wood pieces covered externally with a thin slice of high quality vertical grain veneer on all 4 sides. This product was not cheaper than the solid timber from the Coast, but it was square, dried, structurally sound, and better looking. Technology advances have changed the landscape of the industry and because of this, substitute products can come from unexpected sources.

2.6 Industry Attractiveness

The global softwood forest products industry today is not a very attractive industry. Low profits, intense rivalry, and a high threat of new entrants create a situation where firms must

aggressively and continually reduce costs to stay competitive. Firms with low costs are able to successfully compete as industry concentration is low and there are many buyers and sellers. New entrants that have the ability to access fibre and employ new technology at sawmills can successfully compete with incumbent firms. Labour costs are not a significant problem globally, but high cost labour regions will have problems competing successfully in the industry when markets are soft. Industry downturns occur routinely as there is a strong linkage between the forest product industry and the cyclical nature of the economy and consumer confidence.

Although the industry is currently enjoying a recovery in product demand fuelled by increasing global GDP, the threat of over capacity and oversupply of raw materials from new sources will keep industry profits low. As new supply enters the market over the next couple of decades, global raw material prices will remain steady or decline and as a result, commodity prices should also decline. High cost producers will be forced to take down time during periods of weak demand when product prices fall below firm level variable costs.

2.7 Industry Key Success Factors

The key success factors in the softwood lumber industry are heavily related to their influence on cost. Firms with high costs will not be successful as new entrants with low costs can successfully compete and displace high cost producers during periods of soft demand.

To stay efficient, firms must continually employ new technology at production facilities. This requires routine capital maintenance investments in existing plants or investment in completely new plants. Sawmills have high fixed costs and those with old technologies that are low volume and have poor conversion abilities will not successfully compete on cost with producers that have new, high capacity facilities. Low cost production capacity serves as a defence against the cyclical nature of the market and protects market share when prices are low. The low production costs can also be used to fend off new entrants and producers of substitute

products. Firms do not have to achieve large scale on a multiple plant basis to be competitive, but do need to achieve plant level scales that keep cost low. Firms that achieve large scales can leverage their size to reduce buyer and supplier power, but it is not a key success factor to successfully compete in industry.

Firms must have access to timber to compete. Access to timber is not a barrier to entry as there are many sources available to new entrants in British Columbia, Canada and abroad. In BC, the government makes available 20% of the annual harvest volume to open competitive sales. Access to timber does not necessarily imply that the timber access must be secure. Many successful firms in the industry do not have dedicated fibre sources, but instead rely on low production costs and strategic plant locations so they are able to pay competitive prices for open market timber. Such firms reduce the risk of loss of supply by making short and long term purchasing arrangements. Firms that achieve large scale tend to secure fibre sources to reduce the risk of fibre shortages, but they do this at the cost of having to engage in forest management and dedicate capital resources to forestry and logging operations.

Firms that operate in regions with low labour costs have distinct cost advantages over firms that operate in high cost regions. High cost, inflexible labour is not a general characteristic of the industry as many global regions have low cost, flexible labour. One way for firms in high cost regions to compete is to make aggressive capital investments that improve productivity in the plant and equipment while reducing labour components. The BC coastal industry has neglected investment despite operating in a high cost labour environment because earnings have been low. As such, meaningful reduction in labour due to increased capital productivity has not occurred.

3 INTERNAL ANALYSIS

3.1 Strategic Fit

Over the last decade, the financial performance of forest products companies that operate in the BC Coastal Region has been poor. Industry earnings have been negative for many years because of high costs and weak markets. Interfor has not been an exception to the rule posting negative annual earnings 7 times over the last 15 years.²⁵ In 1998, the Board of Directors made a change to the company's executive and the new leadership embarked on a strategy to reduce costs and improve financial performance by restructuring operations and reducing debt. Since that time, the company has continued to post negative earnings in 5 of the last 8 years²⁶ because of continued high costs, weak markets, the US softwood lumber dispute and a rising Canadian dollar. Despite these challenges, prudent financial management by the company has resulted in a strong and viable firm well positioned for the future with strong operational cash flows and lower debt levels. The company is currently in a position to take advantage of high return strategic growth opportunities.

There are two general strategies that companies employ; a cost based strategy or a differentiation strategy. Interfor has been operating mainly under a cost based strategy since 1998 when the executive regime was changed.

Each of the variables that contribute to the strategic fit of the organization is presented in Table 1. The traits have been graduated between a cost based behaviour and a differentiation based behaviour into 10 units, with 1 considered a very low cost behaviour, 5 being a trait with some properties of each, and 10 as a heavy differentiation trait.

Table 1: Strategic fit chart – International Forest Products - 2005

	Cost Based	1	2	3	4	5	6	7	8	9	10	Differentiation
Product Strategy	Rapid Follower		X									Innovative
R&D Expenses	Low R&D		X									High R&D
Structure	Centralized					X						Decentralized
Decision Making	Less Autonomy					X						Autonomy
Manufacturing	Economies of Scale		X									Economies of Scope/Flexible
Labour	Mass Production					X						Highly Skilled/Flexible
Marketing	Comparative / Push		X									High Cost / Pioneering / Pull
Risk Profile	Low Risk			X								High Risk
Capital Structure	Leveraged									X		Conservative

Source: Author: Adapted from Bukszar 2005, with permission.

3.1.1 Product strategy

International Forest Products has a low cost product strategy. The lumber products manufactured by the company fall into 3 categories: Cedar, Industrial Whitewood and Structural Whitewood. The cedar products include cedar siding and decking materials. Industrial Whitewood includes Hemlock, Douglas fir, Balsam and Spruce lumber appearance grades that are used for doors, windows and other similar uses. Structural Whitewood products are those that are used as structural load bearing members in buildings, and include the familiar dimension lumber products such as the 2x4, 2x6 and 2x8 SPF and Japanese sizes such as 90x40, 90x90, 105x105 and 120x120.

The cedar products are unique products because they can be considered both commodity products and differentiated products. On one hand, it can be argued that cedar products are commodities given there are enough cedar lumber producers that no one firm has the ability to set the market price. On the other hand, it can be argued that the cedar products are differentiated

because their competition is really the substitute products such as plastic and composite decking materials or alternative siding products such as stucco or vinyl siding.

The company has low product innovation because its core product complement comprises of simple commodity goods. The company does produce some secondary lumber products such as finger jointed cedar siding and laminated hemlock and Douglas fir boards, requiring it to take some innovation risk, but it is generally a follower that targets adequate quality and low cost.

3.1.2 R&D expenses

Interfor's research and development expenses are low. There are R&D activities in the forestry and logging operations, but they are approved on an individual basis and heavily scrutinized for meaningful return on investment. They are usually independent and are not typically associated with a greater R&D strategy. At the manufacturing facilities, research is conducted on an irregular basis typically with test runs of different cut patterns, log sizes or log qualities. The company participates in industry group research organizations such as the Forest Engineering Research Institute of Canada. This research body provides the forestry and logging operations with primary or secondary research and development resources.

3.1.3 Structure

The company has characteristics of both a centralized structure and a decentralized structure. Since the 1998 restructuring, the company has been consolidating its business units and its decision making structure. Before 1998, the firm was decentralized and decision makers had extensive individual autonomy.

In 1998, the company went through a period of necessary cost reduction and improved financial management. To achieve this, the executive became very autocratic with all aspects of

the financial operations, tightly managing inventory levels, capital spending and operating expenses. High cost operations were scrutinized and weak performers were curtailed. Along with this came a consolidation of executives, managers and operations. Before 1998, the firm had four VPs managing core operations, one for each of the manufacturing groups (Cedar, Structural Whitewood and Industrial Whitewood) and one for the Woodlands Group; now the company has three, one for Cedar, one for Whitewood and one for the Woodlands. Previously the company had 10 forestry and logging operations; now it has 5. Within these 10 operations there were many managers reporting to a couple of General Managers who in turn reported to one VP. Currently it has 3 managers that report to 1 VP. The end result is a structure with dispersed decision makers, each of which has reduced autonomy in the big-ticket items involving cash and capital. This structure persists today as the company continues to take an aggressive position against high cost operations.

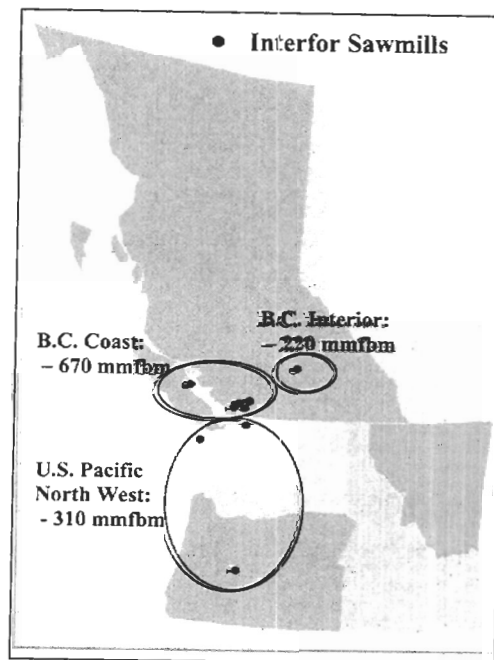
The firm behaves in a centralized manner when it comes to coordinating the supply of timber to its sawmills from the woodlands operations. For many years, individual operations in the woodlands would produce logs if they could earn profits. At present, under a strategy to produce lumber at lower overall cost, the company is moving towards a centralized effort of supplying its sawmills with the logs they require from its own sources.

The company has dispersed assets throughout the BC coastal region, the interior region and the US Pacific Northwest (Figure 5 and Figure 6). Dispersed assets lead to decentralization, autonomy, and individual decision-making despite efforts to centralize structure. The geographic dispersion, coupled with the remoteness of the operations requires a structure that provides autonomy to decision makers. The operational environment is a rapidly changing environment and the structure must allow for sufficient capacity down the line to allow for quick decisions to keep operations moving.

For example, the company has many small capacity sorting facilities in British Columbia's coastal region and a few large capacity sorts. In some cases where the cost of construction is low, it may be most efficient to operate a small sort. But small sorts require large resources and autonomy to operate effectively and at times, consistency in quality becomes a problem. The cost and associated expense in operating a small sort may be larger than sending logs to one of the firm's larger sort facilities.

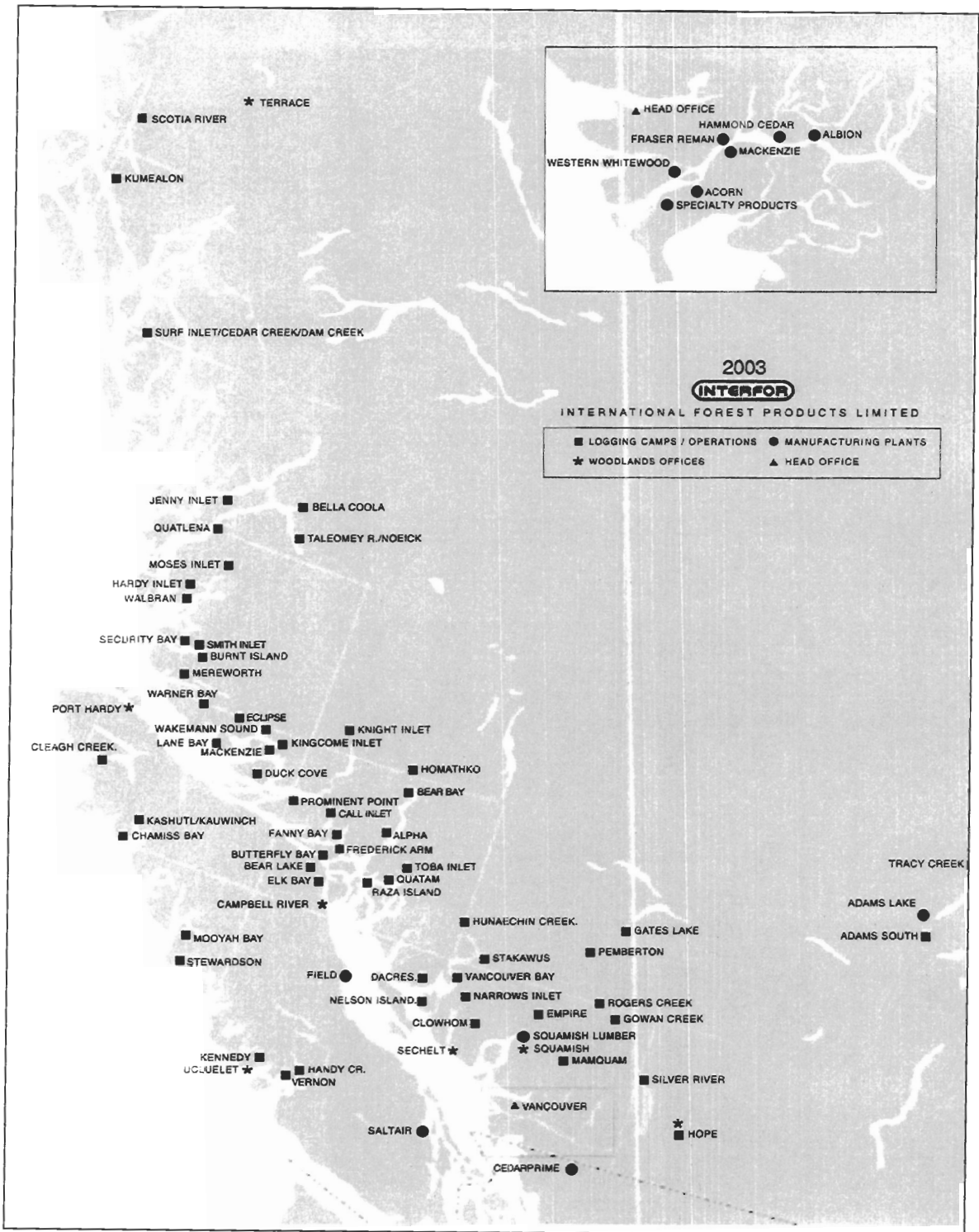
Further, having many sorts may be a source of strategic competitive advantage if they can be used to secure access to timber. The company purchases fibre from external sources including small operators that have won short-term timber sales from the provincial government. These firms typically use third party sort facilities to process their logs. Leveraging its dispersed sort operations to gain first right of refusal on the timber is a good way for the company to secure fibre supply.

Figure 5: Interfor Sawmills, 2004



Source: International Forest Products 2004 Annual Report, reproduced with permission

Figure 6: IFP Operations Map 2003



Source: International Forest Products 2003 Annual Report, reproduced with permission

3.1.4 Decision making

Decision makers in the company have a reasonable amount of autonomy. The company hierarchy starts with a senior management group made up of the senior executives and directors. This group makes high-level strategic decisions, manages financial matters and oversees operations. Three key Vice-Presidents manage the core operations. There is one VP for the Coastal Woodlands, one VP of the Cedar manufacturing facilities and one VP for the Whitewood operations. These leaders manage their respective operations with autonomy over the business matters themselves, but have less autonomy over capital spending and employee management. For example, all capital spending that is outside limits of the approved budgets requires top-level executive approval. Similarly, only the top executives are able to approve new full time hires, as the company has been rationalizing operations since 1998.

Reporting to the vice presidents are the operations managers. These include the forest operations managers on the Coast, all of the sawmill managers and various other management functions including a manager of information technology and a manager of log supply. These managers have reasonable autonomy to run their business units as necessary to earn profits. Managers are under the same constraints as the VPs with respect to capital spending and employee management, and are influenced by the VPs in matters of higher-level operational coordination. For example, if a sawmill is forecasting low raw log inventory, the sawmill VP will communicate with the VP of Woodlands who in turn will influence the woodlands managers into adjusting operations such that the sawmills needs can be met. The same can happen if the mills are oversupplied with timber, woodlands operations will be curtailed until the over supply is relieved. Sawmill managers have similar degrees of autonomy. They manage the mill as they see fit but are constrained in high-level financial matters and employee management.

Under the operational managers is a full level of operational staff with varying degrees of autonomy. In the Woodlands, these positions are generally referred to as Operations and Area

Engineers. These positions have full operational autonomy while keeping the managers informed of the direction of operations. For example, Area Engineers supervise the construction of new forest roads that cost \$100,000 per kilometre. Typically, road contractors build about 1 kilometre per month, and at the end of the month the Area Engineer and contractor measure the distance of road built and agree on the difficulty of road construction sections. The Area Engineer then fills out the invoice and approves the payment to the contractor. The manager and the accountant both conduct cursory reviews of the invoices, but the engineer has the primary responsibility for accuracy and accountability. At the sawmills, there are a number of supervisors that report to the sawmill manager. The supervisors are responsible for the actual day to day operations of the various activities on the sawmill shifts. These positions have sufficient autonomy to ensure that the shifts run smoothly and maximize value and production levels, while the manager is responsible for the overall manufacturing operation.

3.1.5 Manufacturing

The company's manufacturing function operates in ways that achieve returns to scale that are aligned with a cost based strategy. The company's sawmills are specialized assets that convert specific log types into standardized products that are saleable to a specific set of customers. Producing a narrow range of products increases production by reducing downtime for production line adjustments. However, this lack of inflexibility results in mills being dependant on specific markets, which increases risk. Sawmills maximize total production by running multiple shifts and maximizing shift output. Older sawmills with old technology require more maintenance time than the newer technology mills. Maximizing mill output reduces the fixed cost component of production. Most of Interfor's sawmills run two shifts with an overnight maintenance crew that keeps the sawmills in good working order without impacting production.

By running specific logs through dedicated mills, the company minimizes downtime for re-tooling for different products and allows the operations to push for continual cost savings in the repetitive processes. For example, the Hammond sawmill consumes most of the company's cedar logs, both large and small and produces many different products. There is a scale effect by processing all of the cedar in one plant. The many different products that are produced from the different size and quality logs can be combined together in one large operation. Downstream re-manufacturing also becomes efficient as all lumber that requires upgrading is moved from the single plant to the re-manufacturing plant, making transportation more efficient. Also, the company achieves efficiencies through employing a single marketing and sales force in one operation. Another example is the Acorn sawmill. It consumes large standard size hemlock, balsam and Douglas fir logs and converts them into lumber sizes that are specifically made for the Japanese traditional housing market. The company does not send Cedar to the Acorn sawmill, nor does it send Hemlock to the Hammond sawmill.

In an attempt to achieve return to scale, the industry has been consolidating operations and sawmills have been closed. Interfor has shut down 4 mills in recent years: Fraser Mills, Squamish Mills, Fields Sawmill, and Flavelle Cedar. In each of these situations, the product lines produced at the closed sawmill were transferred to another operating sawmill. The combined effect of reducing the capital assets and increasing the production at the operating mills results in reduced overall fixed costs of production and increases efficiencies at the remaining mills.

The company achieves scale effects by improving technology use at existing mills. Technology improvements increase capacity and increase recovery. An example of this is the 2005 rebuild of the Queensboro sawmill in New Westminster. This \$25 million investment will increase the mill capacity from 80 million board feet to 180 million board feet²⁷ through improvements in the speed of the production line, use of computerized scanning and solution

tools, the ability to take smaller size logs, and increasing the number of shifts to two, possibly three per day.

3.1.6 Labour

The labour costs in the BC coastal region are high. From a strategy perspective, the question is whether the production process requires such high skills therefore forcing the company to incur the high cost, and does this fit with a low cost strategy. There is a strong argument that a high skill level is not required. The skill level required for sawmill employment or to work in a logging operation does not require post secondary education, and in many cases does not require secondary education. The skills of the trade are picked up on the job and workers typically work their way up into higher skilled jobs by gaining the experience on the job and working through the ranks. There are very few technical training requirements for labourers in industry. The high labour cost has been a legacy of the resource rich region and the traditionally high labour pool wage expectations. Now that the global economy favours increased globalization and freer trade with all nations, the local industry stands out with very uncompetitive costs. For years this has been offset by the ability to sell higher quality products to customers at higher prices, but this is no longer the case. High production costs are pricing firms out of markets as the competition lowers prices and creates attractive alternative products with better value propositions.

3.1.7 Marketing

The company employs a comparative/push style marketing strategy. The products are moved through lumber wholesalers, regional distribution yards and direct point-to-point sales. Interfor is not a firm that aggressively spends on branding and marketing; the company does not create new or exciting products that pull customers into our show rooms or forces them to recognize brand. The company does not spend large individual sums on advertising and

promotion in attempts to improve unique brand awareness in the marketplace. Most advertising activities are carried out with industry and government associations as collaborators who share a common objective, revitalizing the coastal industry. Over the past few years, as the industry has been in decline and the global market has adjusted to increased competition, the local industry lost market share to competitors from other regions. In an attempt to recapture lost markets, the company joined up with competitors to create common, cost efficient marketing messages that combine the limited resources of all firms. Unfortunately, this is a pitfall of the low cost strategy; the company does not gain individual market identity or market awareness despite spending money on promotions.

One such example of this is the Western Red Cedar Association. This group is trying to stabilize the industry market share for natural cedar products produced on the coast by out advertising substitute products such as hardy plant siding and Trex decking. The group advertises and promotes in targeted markets through specific mediums in ways that attempt to gain maximum exposure through efficient investment. This may be effective for all cedar products, but it does little for any single firm.

A second example of a collaborative effort the company is the China Dream Home project. This project is an industry and government effort to develop a new market for wood frame housing market in China. Interfor participates in this through its membership with the Coast Forest Products Association.

The key message from a strategic fit perspective is that the company spending is limited, but some spending is needed in order to achieve a reasonable level of market awareness. Cost efficient, collaborative efforts may not yield firm level benefits such as company brand awareness but it fits well with a generic low-cost strategy.

3.1.8 Risk profile

The company has a low risk profile which fits well with the low cost strategy. At the most basic level, the company producing lumber for existing markets is a low-risk activity. Interfor has moved into developing new markets, but at a conservative rate. Further, the company does not take many new product innovation risks that have the potential to reap large profits. The company focuses on its core competence of producing simple softwood lumber products. There is some risk in the specificity of the sawmills towards single markets in that if the health of any one specific market weakens, the mills contribution to corporate profits also weakens. Further, where the market endures long-term decline, the company must make large equipment investments to change to other markets, a time consuming and costly activity.

3.1.9 Capital structure

Interfor's capital structure is conservative. Since 1998, the company has run with low debt levels, increasing it only to capitalize on high return strategic growth opportunities. This high equity, low debt position has allowed the company to weather a period of high cost and market decline endured by all coastal companies over the last 8 years. An industry analysis of 8 comparable firms shows that on average, the industry's use of debt has been larger and more extensive than Interfor's has been. Over the 15-year period of study, the average debt to equity ratio was 1.4 for the industry and was 0.5 for Interfor.²⁸ Operating with low debt keeps interest expenses low, an important consideration when operating under a cost based strategy in a cyclical industry.

From the strategic fit perspective, Interfor's capital structure is an outlier for a low cost strategy. Conservative capital structures fit well with those firms employing a differentiation strategy, that is, those that continually embark on high-risk ventures that may fail from time to time.

Having low debt allows the company to behave in an opportunist manner. For example, with low debts and existing unused lines of credit, the company can choose to make disciplined investments when good value growth opportunities are available. During times when opportunities are few, it can use cash flows to repay debt, build cash reserves or invest in internal capital assets. Over the recent years, management has demonstrated discipline in their spending on growth by walking away from two acquisitions that on the surface became expensive and appeared to be over-valued.

3.1.10 Fit conclusion and observations

Interfor's behavioural traits match up well with those traits that dominate a generic low cost strategy. The company has a cost based product strategy with low research and development costs, some scale effects at its mills, and low marketing and risk profiles. The structure is naturally decentralized due to the dispersion and remoteness of its operations. Decision-making exhibits some autonomy, although executive level approval is required for high value transactions. The company's labour costs are high and the capital structure is conservative, both of which are counter to a cost based strategy.

The organization's structure makes low levels of autonomy difficult to achieve. The remoteness of the forestry and logging operations on the Coast naturally require local decision-makers that can make decisions that relate to the efficiency of operations. The sawmill operations are also geographically dispersed such that individual autonomy is required at the mill sites to efficiently run the operations. Decentralized structures require decision-makers to have more autonomy than in a more centralized structure. Decision-makers that have increased autonomy are experienced and well educated and command that higher wages, increasing costs.

The company takes centralized control of significant transactions and matters of employee management, but it can make improvements in centralizing its structure further. For

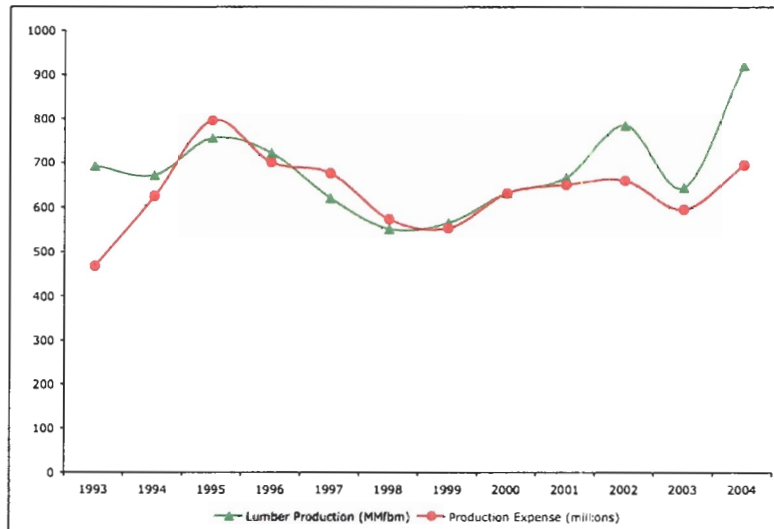
example, logging operations can be given less autonomy by contracting out more phases of operation. This puts centralized control in the hands of the engineers and operations managers through the elimination of camp level managers and contractors that tend to make independent decisions. Use of newer technologies at mills can reduce labour, resulting in less human based decision-making and autonomy. For example, log scanners that determine the optimal cut pattern for a log can be installed for all lines in each mill; reducing the autonomy of the operator in that position. Doing so would make the position more of a routine operator position opposed to that of a decision-maker position whose actions directly affect the value of products manufactured in the mill.

Related to the centralized structure and decision-making is the firm's high labour and manufacturing costs. There is a high correlation between the volume of lumber produced and the cost of production, indicating a heavy variable cost component of the firms cost function (Figure 7). Capital improvements or capital investment in newer mills will improve efficiencies and will reduce production expenses and the gross margin. More efficient mills can lower the variable cost attributed to labour, and higher total productivity should result.

The company can improve its efficiency and lower costs by making large capital improvements in existing assets. Over the recent years, capital management has been conservative and spending has been low. Credit lines have been used to purchase new plants, resulting in expansions in capacity, but missing the opportunity to investment in productivity improvements at existing facilities. The firm could use available credit lines to improve the current assets, and in doing so, become a more leveraged firm. This may be a necessary step to position the firm at the lower end of the industry cost curve to remain competitive in the global marketplace. Operating in BC may mean that higher labour costs are an inherent part of running a business, but cost efficiency moves are possible than can improve competitiveness. Ultimately,

the firm may not be able to achieve cost leadership, leaving the firm vulnerable to lower cost producers.

Figure 7: Company lumber production and production expenses



Source: Author; from data in 1997-2004 International Forest Products Annual Reports

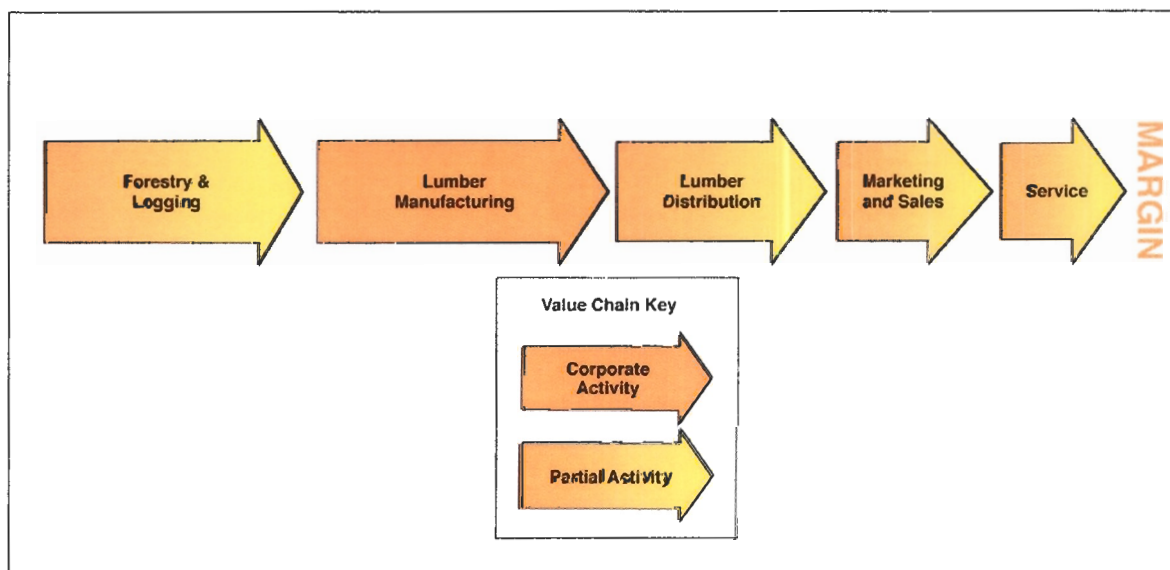
A discussion on how the company might improve itself from a strategic fit perspective is best done in the context of Michael Porter's concept of degrees of overall fit. Porter identifies 3 degrees of fit.²⁹ First order fit is a simple consistency between company activities. Second order fit is one in where the activities themselves are reinforcing and a third order fit is one where there is optimization of effort as a result of the fits. In all three degrees of fit, the sum of the whole matters far more than the sum of the parts and the real sustainable advantage grows out of the entire system of activities. Interfor's real weakness is one where the low cost strategy does not achieve the second and third degree fits that Porter describes. The company has employed an aggressive cost reduction strategy for many years without producing consistent results. It operates in an environment where costs are high. It produces some high quality lumber, yet it fails to market it as a high quality lumber with a recognized brand.

3.2 Industry Value Chain

The industry value chain is presented in Figure 8. The primary value chain activities are comprised of many individual activities that create real value for the firm. For example, the Forestry and Logging activity creates value by conducting three main activities: forest planning on undeveloped parcels of forestland; logging operations on these planned parcels of land; and by transporting the logs to manufacturing facilities.

As a vertically integrated firm, the company participates in most activities of the primary value chain, although there are many activities the company outsources as they are outside the firm's core competencies. An example of this is the log transportation phase of logging; the company contracts tug and barge companies to tow log booms from camps to destination sawmills or sorting facilities. Many activities in the firm's value chain are carried out by both the company and by other parties. The industry value chain identifies activities that Interfor fully or partially performs.

Figure 8: Softwood lumber industry value chain



Source: Author, adapted from Bukszar 2005, with permission

3.2.1 Forestry and logging

The forest products industry value chain begins with undeveloped forest on either public or private lands. The initial phase of value creation is in the form of forest development planning. The activity typically begins with office planning that balances a series of economic harvest units dispersed across the forest in a manner that respects non-timber values as required. Forest workers conduct on site planning that determines the location of roads and harvest block boundaries and they identify special operational considerations such as fish creeks that require special treatment. The standing timber is evaluated for economic viability and the area is evaluated for reforestation considerations. Forest planners then seek out necessary government approvals and permits required prior to harvesting and road construction. The forest planning stage also forecasts the log profile that will become available for sale to sawmills.

The second main activity of the forestry and logging activity is forest operations. The first phase of operations is to access the harvest area by constructing roads into the areas. Firms then add value by harvesting the timber and transporting it to a sort and storage yard or transporting it directly to a manufacturing facility. Incremental value can be added at this phase by managing the log quality, recognizing the log values and by being prepared to take advantage of market opportunities. Managing road and log inventories can also create value for the firm by minimizing working capital requirements.

The third main activity of the forestry and logging activity is log transportation. This involves transporting logs from the harvest block or central sort yards to the sawmill. The most common mode of transportation in the industry is a logging truck, but other methods are also employed. Some forest operators use rail systems to transport logs over large distances of land. In coastal regions, water is the main transportation system with operators towing booms of timber or barging loose logs over larger distances of water. Ocean liners are also employed if logs are exported to overseas manufacturing facilities. A key success factor in log transportation is

getting the right log to the right destination with the least amount of handling. In regions where the timber is homogenous, all of the timber may go to a single manufacturing destination, whereas in areas where the timber is diverse, the number of destination facilities may be 10 or more, requiring a coordinated effort at the firm level.

Interfor partially participates in the forest planning activity of the value chain. In 2003, the company supplied only 30% of the logs consumed by its sawmills.³⁰ This level should remain constant, as the recently acquired sawmills do not have dedicated fibre supply assets. The company's dedicated forestry and logging operations reside mostly in the coastal regions of BC and some in the Interior region of BC.

3.2.2 Lumber manufacturing

The manufacturing phase of the value chain is the primary activity of converting logs into lumber. Softwood lumber products are commodity products and successful firms are those that efficiently convert the logs to lumber at the lowest possible cost. Lumber manufacturing can be divided into five main activities: log purchasing; log inventory management; sawmilling; lumber drying; and lumber inventory management.

The log purchasing activity is primarily responsible for procuring logs from internal and external sources in a manner that keeps the sawmills running at efficient levels. Different firms in the industry have different mixes of internal and external sources, and as such have different levels of skill in this activity.

Log inventory management involves ensuring that sufficient amounts of timber are readily available for sawing. This may involve achieving the optimal species mix, size and quality of logs in order to match upcoming order files or to achieve manufacturing efficiencies. Further, achieving a sufficient inventory of logs is important so firms can outlast disruptions in

log supply that may result in costly sawmill downtime. Canadian firms have unique challenges around maintaining sufficient log inventories as Canadian weather extremes change operating conditions in the forest many times a year.

The sawmilling activity is the primary value chain activity. Converting round logs into lumber in a manner that maximizes margin is a challenging proposition in an increasingly competitive global industry. Sawmilling involves breaking the log down into different lumber products based on dimension, length and quality or grade. Efficient operators create value by producing the high value lumber products with the low cost inputs. Technology improvements continue to add value by increasing the operators understanding of the optimal log break down pattern and by increasing the lumber recovered out of each log sent into the mill.

Lumber drying has become an important activity in the forest products value chain. Firms were once able to send green lumber to market, but as competition increases and kiln technology decreases in cost, the market has come to expect that the lumber be dried. Demand for kiln-dried lumber has increased because the boards don't shrink, twist or warp after they have been used in applications.

The lumber inventory management activity of the value chain is challenging. The cyclical nature of the business creates situations where firms can be short of supply during periods of increasing demand or be caught with excess supply in periods of soft demand. Lumber pricing has been volatile over the last many years, and companies stuck with large inventories have been hit with large inventory write-downs. A key aspect of the business is keeping the customer supplied with lumber when they want it, despite cyclical challenges facing the firm. Because industry goods are homogenous and customer-switching costs are low, producers can easily lose customers if products become unavailable. This aspect encourages companies to tightly manage lumber inventories.

Interfor fully participates in the lumber manufacturing activity. The firm owns ten lumber sawmills in British Columbia and the US. On the coast, a log supply group manages log inventory activities. The group is tasked with balancing the supply from internal and external sources such that individual mills maintain sufficient log inventories to meet their consumption requirements. The BC sawmills consume both internal and external logs while the US sawmills operate completely on external log purchases. Interfor's sawmills create value by sawing specific species and grade at different mills. Over the last 5 years, the company has been actively acquiring, consolidating and investing in sawmills in an effort to improve conversion efficiencies.

3.2.3 Lumber distribution

The lumber distribution activity in the value chain involves transportation of the finished product from sawmill to the customer. Methods of distribution include truck, rail, and container ships. The customer base is diverse and ranges from wholesalers, distributors, retailers, builders or other industrial users in both domestic and international markets. Value is created by selling lumber at the largest price and incurring the lowest transportation costs. For example, firms may maximize value by selling a large package of lumber cheaper than it otherwise may if the large package results in transportation efficiencies. Alternatively, if the end customer only buys small volumes, and there are many of them, outsourcing the final distribution to a distributor, wholesaler or retailer may be the best way to maximize value.

Interfor engages in most aspects of distribution but outsources some activities. For large US customers, the company distributes directly from the sawmill to the customer. Some of Interfor's cedar products are sold through regional distributors who in turn distribute to small individual building contractors. Industrial products for domestic and international consumption are sold direct from company facilities to industrial customers. For the Asian market, shipments are made using ocean liners. The company sends large volumes of lumber in each shipment and

distributes directly to end customers if possible, but also through distributors and wholesalers if necessary. Generally, the company attempts to ship direct to end users as this eliminates middlemen, but at times, using retailers and distributors is necessary to minimize shipping costs and minimize inventories.

3.2.4 Marketing and sales

In the context of creating value, marketing and sales in the forest products industry involves identifying customer needs, providing new solutions and generating incremental sales. Marketing efforts can create brand awareness for a firm's products, seek out an understanding of the customer's business, and provide new applications not previously utilized by the customer. At the international scale, marketing efforts create and develop new customers. For example, the BC's China Dream Home project in Shanghai is meant to create a market for BC's softwood products in China by creating market awareness for wood homes and to teach local developers, architects, builders and government about the many benefits of softwood homes.

Interfor has a marketing and sales group whose main task is to generate sales. The company is not a sophisticated marketer as it competes on price and quality more than reputation and branding. Having lost much of its share of traditional markets in Japan to competitors, the company has been forced to find new markets and aggressively engage in marketing activities to recapture old markets. Both are challenging tasks when the cash available for marketing investment is constrained.

The Japan market underwent fundamental change in the aftermath of the 1995 Kobe earthquake where many traditional Japanese post and beam houses built with Coastal lumber collapsed. Over six thousand lives were lost in this event.³¹ At the time, the building code allowed traditional homes to be built with green, un-dried hemlock, a product that was susceptible to insect and decay damage that weakens the product's structural properties. The earthquake was

of sufficient scale that homes with weak members failed, contributing to the collapse of the entire house. As a result, Japan revised its lumber building code to one that favours kiln-dry and pressure-treated lumber as these products better resist insect damage and decay. The market was lost because coastal producers failed to quickly respond to the rapidly changing market and had insufficient kiln-drying capacity to adapt. The consequence of this event was that Scandinavian countries captured the market because they already produced a kiln-dried substitute product for green hemlock.

The company has many brands on various products that are recognized at different levels in the market. Currently the firm operates under brand names including “Interfor”, “Interfor KD”, “InterforPacific Inc”, CEDARPRIME® and has Cedar decking brands “Regal” and “Elite”. The Adams Lake production facility markets its products in Canada and the US as “Adams Lake Lumber”. The company also utilizes the Coast Forest Products Association brand “Canada Tsuga” and the Western RedCedar Association’s “RealCedar” brand.

3.2.5 Service

In the context of creating value, forest product firms don’t provide aggressive service after the products are sold. The value captured from the service function comes from the quality feedback loop that ensures products meet customer expectations prior to purchase and their experience with the product during use. This feedback loop is integrated with the marketing task of understanding customer needs and expectations. The service function in certain markets has extended to informing the customer of product specifications and providing training in proper use of products. The China Dream Home project can be used as an example of downstream service provided by producers. A main goal of the project is to teach builders how to build homes using softwood lumber.

Interfor outsources the more visible post-purchase service functions by participating in industry associations that collaboratively address the customer needs. Indeed, part of the role of the company's sales and marketing group is to service the customer, but it does not provide service in the full context of a corporate strategy and the value chain.

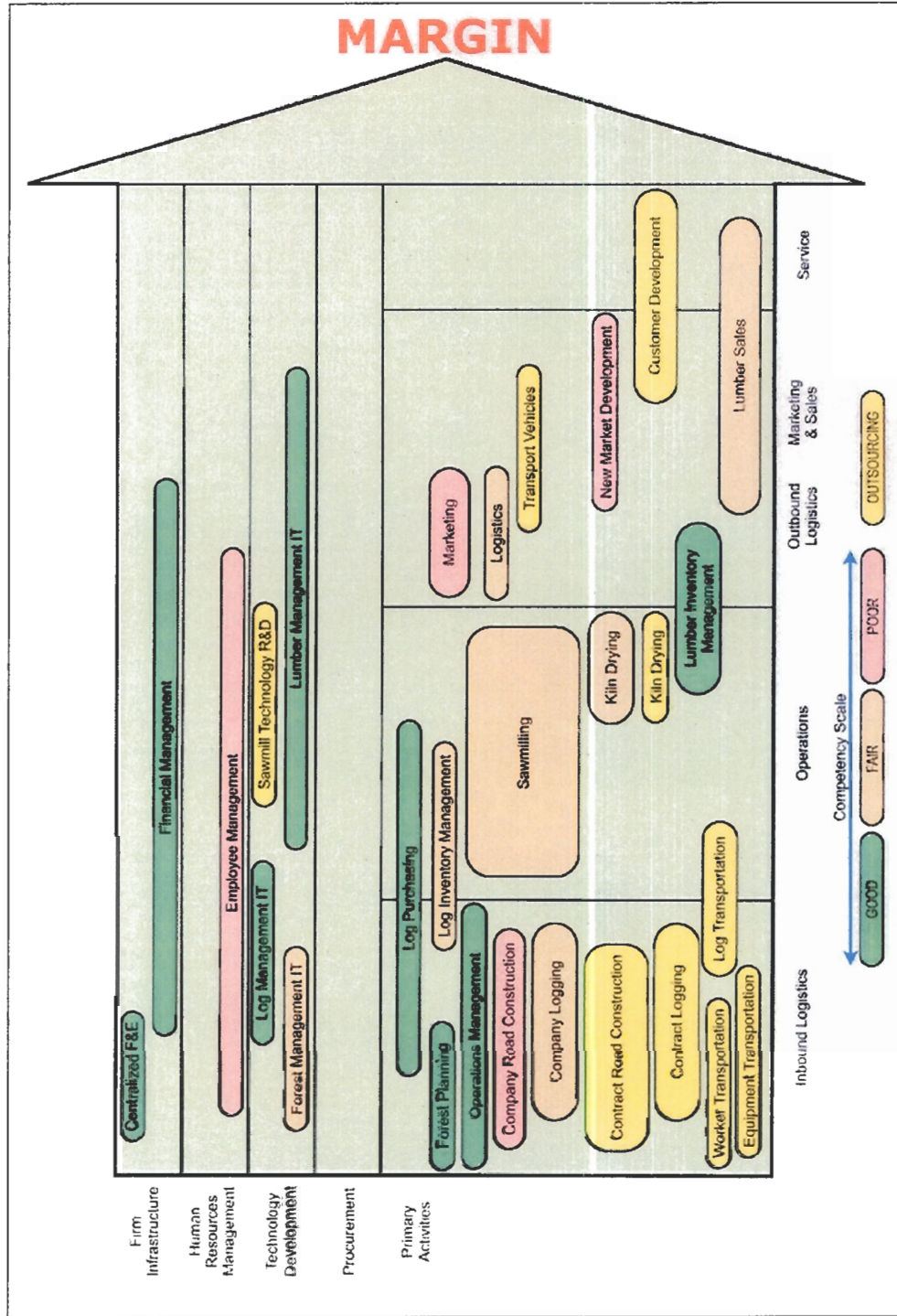
3.3 Company Value Chain

The firm level value chain is shown in Figure 9. Activities have been coded to indicate the competency level of tasks performed by the company or they are shown as outsourced activities. The following sections will describe each of the primary activities adding insight on the tasks, the competency level of each and how they may or may not lead to competitive advantages.

3.3.1 Forestry and logging

The forestry and logging activity adds value by developing the standing timber resource, converting it into sawlogs and delivering the logs to the sawmills. This group supplies about one half of the company's BC sawmill log requirements. The company purchases the remaining logs on the open market. The sawmill operations in the US outsource this activity by purchasing all logs on the open market.

Figure 9: Interfor Value Chain



Source: Author; adapted from Porter, Michael E 1985.³²

3.3.1.1 Forest planning

The company is good at forest management; it is a core competence. The firm excels at planning because it has a core group of engineers and foresters that are good at recognizing potential value in difficult, remote locations. Interfor is good at operating in remote areas in the coastal region where other firms don't necessarily want to operate. The structure of the operations is such that each of the engineers has control over all activities that occur in their operating areas. Engineers have a team of support staff and report to one of 3 operations managers in the Coastal Woodlands Group. The structure provides the opportunity for efficiency gains as the individual engineers have their eyes on all the activities in their respective areas.

The firm's infrastructure also supports the forest engineering competency by having centralized offices in Campbell River. This fits well with a low cost structure by yielding high control over the activity, but more importantly, the centralized structure allows F&E staff to easily communicate with each other. Problems can be worked out by consulting peers and new ideas and opportunities are easily shared during hallway conversations. The company has been shifting towards a more centralized structure in the planning groups over recent years and it has produced noticeable benefits for the firm in this area of value chain competency.

3.3.1.2 Operations management

Having the core group of engineers responsible for all activities in the operation also creates value, as a core job function is operations supervision. As operations supervisors, engineers hold the first hand knowledge of what the government environmental expectations are, allowing them to approve operational efficiencies that save money. For example, despite the fact that a road construction permit approved by government is done with the expectation that a ditch line would be built along the entire road, there are situations when constructing a high cost

section does not require a ditch. Knowing this and ensuring that the shortcut is taken when the opportunity is presented saves large sums of money.

The same phenomenon happens in the area of log quality. Many engineers know the log quality expectations of the sawmills and are able to manage quality from the first day a person sets foot in the stand of timber to the day that it arrives at a sawmill. The combination of internal log supply and internal log quality knowledge creates value for the sawmills by providing them with a source of fibre that returns high log recovery for the product mix the company produces for market.

The operations group also creates value by maintaining control of internal log supply. The group supplies about 50% of the mills requirements on the Coast. During periods when log markets are weak and supply is abundant and prices are down, the company can reduce internal supply, as external supply is cheap. During periods when log markets are strong and supply is low, the company can increase internal supply to reduce dependency on external sources that are priced high. Internal supply can also be used as to keep log prices affordable for sawmills. By reducing purchasing activities during high price periods, demand in the open market is reduced keeping prices in check.

3.3.1.3 Road construction

Road construction adds value by developing the harvest block, with a road that has been designed by company engineers and approved by government. The road is located in such a manner that maximizes harvesting opportunity while minimizing road cost. Staff engineers balance the marginal cost of the last length of road with the marginal benefit of harvesting the timber. They do this by calculating the road rate for the additional timber accessed by the road and if the cost of construction is excessive, engineers consider either not harvesting the timber or harvesting it with heavy lift helicopters. For example, a simple large harvest block that can be

developed with a single road may have road cost of \$5.00 for each cubic meter of timber harvested. If an additional area of harvest can be added to the block, but only with an expensive road, a high marginal road cost results. This raises the road cost for the whole block, increasing both the amount of capital consumed in road construction and reducing the block margin during harvesting as the road costs are amortized against the timber harvested. In the end, it may be better to harvest the extra timber with a helicopter, or it may be better to simply not harvest the area at all. Forest engineers have the autonomy to make these decisions based on experience.

The company both employs company road builders and outsources to contractors. Road construction on the coast is a high cost and high-risk activity if the operation is not run with high efficiency. Over the last decade, the company has been moving more towards outsourcing as the comparative costs between contractor and company operations spreads. Company operations tend to be small and isolated, and as such do not achieve the efficiencies of scale that are necessary to minimize costs. Further, it is not a primary focus of the company and the road crews don't get the high value, experienced operators or foreman, thereby setting them up for higher costs resulting from a lack of expertise.

The company spends large sums building roads every year. These costs are capitalized and amortized against the specific timber volume accessed by the roads. This lines up with the general accounting practice of aligning expenditures with revenues; that is, the cost of construction gets booked when the timber is logged, on a block-by-block basis. Road construction is a major use of capital as the company annually builds around \$24 million in roads.³³

3.3.1.4 Logging operations

Harvesting operations add to the value chain by converting standing trees on the hillside to round logs on a roadside ready for transport to a sawmill or dry land sort facility. Interfor employs both company-owned logging crews and logging contractors to conduct this activity.

Company operations create value in a few ways that are incremental to the primary value creation activity of logging. The company gets first hand insight into the real cost of logging which helps when negotiating with comparable contractors. The company is able maximize margin in unique circumstances that would otherwise be foregone if contractors were employed. For example, Interfor has found that loading out the timber developed during the road construction activity costs about half of what a contractor would charge to load it. This adds up to hundreds of thousands of dollars in each camp able to seize the opportunity. Also, using company equipment and crews keeps the profit and loss risk premium and entitlement premiums in company hands, thereby minimizing cost.

Outsourcing to contractors also provides value by providing incremental logging capacity when the markets strengthen or when company operations are not available. The mix of contractor and company crews is an example of tapered integration. Contractors are also able to specialize for certain types of harvesting, which allows for greater efficiencies than being a generalist contractor. For example, a contractor can set himself up to be a second growth logger that works in areas connected to urban towns not requiring camps. Similarly, they can specialize in isolated old growth logging operations. The use of contractors reduces overall fixed costs of operation, as contractor-logging costs are booked as full variable expenses. Company camps have a substantial fixed cost component comprising of capital plant, property and equipment logging assets.

Recently, the company announced that all company logging operations would be contracted out. This will come at the cost of the benefits noted above, but will also expand the benefits of contractor operations. Importantly, the transaction costs of managing company operations will be eliminated as will the fixed costs attributed to the capital assets. This will help the company operate efficiently in low markets as contractor costs are all variable costs and the company will not feel the pressure of operating to cover fixed costs. In all, the move will help the Woodlands group focus on the competence of forest and logging management and leave the logging itself to others.

3.3.1.5 Worker transportation

Worker transportation refers to the business of moving employees to and from isolated camps. This is usually accomplished using floatplanes and crew boats and in the past was conducted in-house by forest companies themselves. However, outsourcing is now possible because a sufficient transportation service industry has developed. Interfor has seized this opportunity and although it still owns a few crew boats for local needs, the company now charters nearly all transportation requirements. Running a transportation company is not a core competence of a logging company.

3.3.1.6 Equipment transportation

As with the employee transportation function, Interfor outsources equipment transportation. The company extensively utilizes equipment barges to move logging equipment from one logging camp to another and although it could engage in running the business from within, it is not a core competency of a sawmilling company to run a barging company.

3.3.1.7 Log transportation

Log transportation at Interfor involves moving the company's logs from camps to the sawmills with tugs and barges. Towing operations involve picking up completed log booms and

towing them to the Fraser River. Log barging involves loading entire log bundles onto large barges and towing the barge down to the lower mainland. Interfor staff works with the tug and barge companies to coordinate activities, but has stayed out of the business itself. Outsourcing this phase allows the towing companies to gain relative economies of scale with their fleet of boats, their maintenance activities and the log packages they tow.

3.3.2 Lumber manufacturing

Interfor is fully involved in the lumber manufacturing activity of the firm value chain. Manufacturing lumber is one of the company's core competences. The sawmilling business has struggled to return profits in recent years causing the business to restructure. Contributing to this was the Asian economic crisis, a strengthening Canadian dollar, the US softwood lumber dispute and escalating domestic operating costs. On the firm value chain graphic, most of the activities have been rated as a 'fair' competency as the company needs to restructure and reinvest in the business to regain the competitive advantages it once had.

3.3.2.1 Log inventory management

Log inventory management refers to the activity of organizing log flows in an optimal manner that meets sawmill requirements while minimizing working capital. Maintaining low log inventories reduces working capital investment, but puts sawmills at risk of running out of logs, a costly event, should it occur. Running with large log inventories increases working capital requirements and puts the firm at risk of inventory devaluation if the market weakens. Logging and sawmilling is a cyclical business. Successful firms are able to slow the accumulation of log inventories during the end of strong market cycles to avoid costly inventory write-downs, and they are to build up inventories in anticipation of good markets.

For example, in the fall of 2004, the company observed an accumulation of cedar log inventories proceeding months of lower demand and moved aggressively to curtail operations

preventing large financial losses. The firm purchased cedar from external sources to meet sawmill requirements as the prices fell and waited until market demand increased before resuming internal production. The core operational VPs, with guidance from the senior executive and the marketing and sales groups, make decisions on log inventory levels.

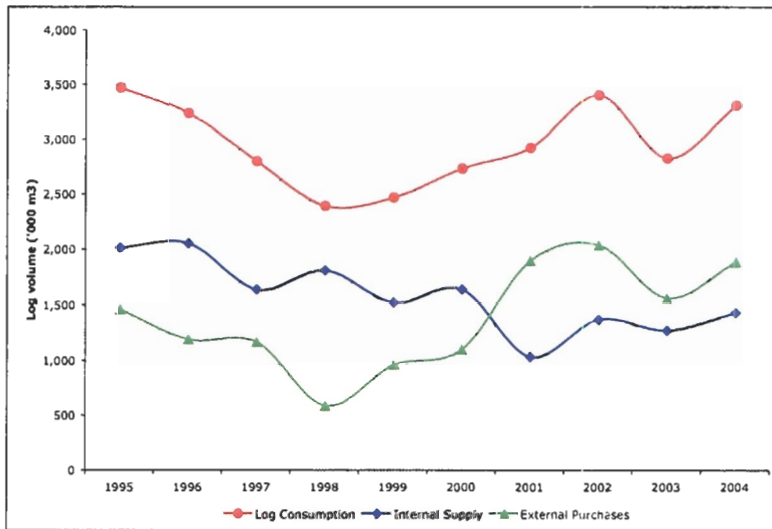
The firm is also able to quickly respond to log shortages by shifting internal operations to harvest areas that contain the desired log species and grade. This is one of the benefits of having control of internal tenure; at times some log types are simply not available on the open market and the company must supply itself with the required log sort.

3.3.2.2 Log purchasing

A core competency of the company is its ability to purchase and trade substantial log volumes on the open market. The company's log traders have excellent knowledge of the sawmill requirements, the properties of the logs they are moving, and the underlying supply and demand dynamics of the local log market. In the BC operations, the log supply function observes and supplements internal log supply with that of external logs to keep the sawmills running with optimal log inventories. Typically, the company has produced more logs than it consumes, much of which is sold to other companies (Figure 10). Without this competency to successfully trade logs, the company would need to position itself as one that fully consumes all the fibre it produces. The company consumes most of the hemlock, balsam and cedar logs it produces off its own tenures, part of the Douglas fir log production, and little of the cypress or spruce log production. Lower quality logs such as pulp or shingle logs are sold externally, as are specialty logs such as poles and pilings, house logs, and peeler logs used in plywood manufacturing. The value received from most of the logs sold externally exceeds the value that would be created by consuming the logs internally. This dynamic is necessary on the coast as the timber grows in

heterogeneous stands with many different grades and species and it allows the company to specialize in product groups.

Figure 10: Historic Log Activity



Source: Author; from data in 1997-2004 International Forest Products Annual Reports

The US operations are fully dependant on log purchases as their sole source of raw material. The company has log buyers in these mills that network with local loggers to arrange delivery of logs to the mills. The mills are low cost, efficient and geographically positioned in ways that give the buyer the ability to pay competitive prices for the local logs. This keeps the wood flowing into the mill. The log buyers have a great deal of autonomy to make decisions as they relate to their business units.

A benefit of relying on external sources is that the capital requirements are less compared to operations that have higher capital requirements associated with company forestry and logging operations. In the US, one staff person at each mill is responsible for the log supply function that allows the business to stay focused on the core business. It also keeps the capital low and focused on the sawmill as the cost of logs is expensed immediately as a cost of goods sold. The coastal sawmill business unit supports capital requirements of both the woodlands operation and the

sawmill operations. Also, the transaction costs of delivered logs from internal sources is higher, as there are many people involved in the business of supplying logs to the mills.

3.3.2.3 Sawmilling

Sawmilling is Interfor's primary value chain activity. The mills produce three groups of softwood products: whitewood dimension lumber; whitewood industrial lumber and cedar lumber products. The dimension lumber production process is distinct from the industrial and cedar processes as the former produces commodity products and the latter produces high value appearance grade products. The company is competent at each of the processes, albeit each for different reasons.

The structural lumber production strategy consists of moving large volumes through mills at high rates of speed to reduce average production costs. Interfor's structural mills cut small, low value hemlock, spruce, pine and fir into the 2x family of boards for the home construction market and cuts larger logs for the Japanese square market. Interfor's structural mills include Queensboro, Acorn, Adams Lake, Port Angeles, Marysville and Gilchrist. A structural sawmills' core competency is cutting large volumes of lumber quickly, accurately and in a way that optimizes value. Investments in the technology used at the sawmills keeps the production volumes high. Interfor's sawmills in Adams Lake and Port Angeles are newer mills using new technology while the Queensboro mill in New Westminster recently completed a major technology upgrade. Technology investments add value by optimizing the value of each log as the computer can make fast, accurate and repetitive decisions on many small pieces far better than any one employee can. Downstream stages of the process that add value include edging, planning, trimming and kiln drying. Real value is added at the grading station where individual boards are visually graded for appearance defects such as excessive wane or knots in the board.

The industrial lumber production process varies from the structural process in that larger, higher value logs are cut for appearance grade features rather than strength and dimension features. Interfor's industrial sawmills include Hammond Cedar and Mackenzie Seizai. Contrary to the structural production process where high volume is important, extracting maximum appearance grade out of the log is the top priority for industrial products. Both sawmills use conventional head rigs that pass logs through fixed position band saws. Headrig operators manually make the cutting decisions for each log with the goal of maximizing clear grade lumber without visible defects. Sawyers are very important as the value recovery of grade logs are explicitly linked to the decision the operator makes.

Both industrial mills use older, manual technology in the production process. The mills have not seen aggressive capital investment over the years because their core competence is not technology dependant. One of MacKenzie's specific competencies is that it has the largest headrig on the coast, which makes it the last coastal sawmill with the ability to saw the extra large old growth logs up to 40' in length. To this end, MacKenzie operates about 30% of the time on custom cuts that are for other log owners. A competence of the Hammond Cedar is that it takes both large and small cedar logs and cuts appearance grade lumber and siding out of them. This flexibility allows it to cut most of the company's cedar production and allows them to keep average cost down for all products. Secondly, they extract premium value out of the factory grade lumber that contains knot and defects by removing defects and finger jointing the small clear pieces into large clear, high value boards. Hammond does this upgrading at a facility in the US, which also serves to minimize softwood lumber duties.

Interfor's structure also strengthens the core competence around sawmilling. By having a logging group that produces half of the logs consumed by the sawmills, the company is able to achieve high lumber recoveries as logs delivered from internal sources have desirable quality characteristics that external sources do not have. Internal logs are sorted for the best use and are

then sent to the best sawmill for conversion into lumber. The log supply group facilitates this activity and is responsible for communicating sawmill needs to the woodlands operations. This synergy between log supply, logging and sawmilling groups creates incremental value for the company.

For example, Acorn sawmill produces Hemlock squares for the Japanese market in 4m lengths. The company produces logs in multiples of 4 meters with trim, the lengths being 8.3m, 12.5m and 16.8m. The industry refers to these as ‘preferred lengths’. Internal log production has high-preferred length content because the end user is known and it is in the company’s best interest to produce good lengths. In contrast, external log sources may not have high-preferred lengths, as the external log producer may not have been producing the boom specifically for Interfor’s Japanese customers. Typically, external logs are produced to maximize volume based on the top diameter of the log, opposed to both top diameter and length. In the end, when the sawmill cuts the external booms, the off-length portions of the logs are wasted, which results in lower lumber recovery.

3.3.2.4 Kiln drying

Kiln drying adds value to the products by increasing the reliability and stability of the lumber. Kiln drying is the process of removing water from the wood fibre down to a level below 19% moisture content. Lumber is kiln dried before the boards are edged and surface planed. The largest driver of kiln drying on the Coast has been the Japanese market’s need for more structurally stable Hemlock lumber. Kiln drying is considered a fair competence of the company because it must make further investments in kiln capacity and technology to meet market needs. One of the company’s challenges is that Hemlock lumber takes 3-5 times as long time to dry as compared to Douglas Fir and Western Red Cedar. Kiln drying Hemlock consumes much more energy than other species and the species doesn’t dry evenly, resulting defects that result in a

higher ratio of low value products than with the other species. As the company moves toward full drying of Hemlock, new kiln capacity is needed to process the full production. In the mean time, some kiln drying is outsourced, although the extra hauling cost of moving the production between facilities is expensive and erodes margins.

3.3.2.5 Lumber inventory management

The company manages sawmill lumber inventories by employing methods to ensure volumes do not reach high levels. With the market volatility experienced over the past few years, companies with large inventories have been hit with costly inventory write-downs. The company manages inventories by quickly curtailing mill production and pushing back on the logging operations if necessary. It also manages inventories well by moving products to wholesalers if necessary to limit financial liabilities.

3.3.3 Marketing, sales and distribution

The company has a strong competency in sales and distribution, while marketing itself is not an overall strength. The marketing conducted is carried out in association with other industry companies or is done in conjunction with the government. The weakness of this strategy is that the company gets little brand and market awareness as the message tends to be generic encouraging the use of the products showcased, not necessarily to purchase Interfor's products specifically. Further, the company spends little on new market development. It does at times produce new products for existing markets, but it avoids aggressive spending in order to be the first company into a new market.

The company has a sales team that has good relationships with the customers. This is a core competency of the company as it is able to leverage relationships to generate sales and improve products, thereby preserving market share. The company does this by placing the sales teams in each of the mills. This strategy facilitates an immediate and direct communication line

between the customer, the sales agent and the production facility. The sales agent also works in conjunction with the distribution team at the sawmill to meet the customer needs on timing and delivery methods. Quality issues, size control and length specifications can be changed quickly to satisfy customers.

Lumber distribution involves the use of truck, rail and container ships to transport the finished goods to customers. Interfor generally outsources the transporting itself to shipping contractors, although the company owns a short line railroad in Oregon and is the majority owner of Seaboard Shipping, a company used to ship lumber to the Asian markets. Shipments made to North American destinations are made mostly by truck and rail, while almost all of the company's offshore sales are shipped through Seaboard. The method of distribution depends on the location and timing of the sales made to various customers. The competitive advantage of Interfor's distribution channel is its flexibility. With the majority of the mills on the Fraser River, there are many options for shipping as noted above. In addition, the company aggressively manages lumber inventories with sales and storage yards. The mills have sufficient storage capacity to build up large inventories that can be shipped together, thereby gaining scale efficiencies. The marketing and sales group makes the decision on how to ship finished goods on a case-by-case basis in accordance with customer needs.

The ownership of Seaboard Shipping came about in 1936 as various industry producers realized that they must collaborate to arrange a dedicated fleet of ocean liners that had the capacity to ship large volumes of forest products to offshore destinations. Currently, Seaboard owns a number of ships that carry forest products to European, Asian and other world ports. On return trips to North America, the ships haul import vehicles destined for North American markets. Seaboard owns a 100 million board foot port terminal on the Fraser River in Vancouver. Although the shipment of BC lumber products has declined in recent years, the ships have been

busy moving committed volumes of lumber and plywood to offshore markets, as well as shipping other general cargo.

3.3.4 Service

In the context of a value chain, service relates to the post sale service provided to the customer. The firm provides customer service through its sales team. There is little a lumber company can do post sale that is product related, but there are many ways to service the customer before and after the sale to ensure the customer needs are met. One way Interfor does this is by outsourcing customer development activities such as training in product construction practices. They do this through the same industry associations that are relied upon for marketing. For example, the company is a member of the Western Red Cedar Association, which trains sellers, builders, contractors and distributors on the many possible uses, and benefits of cedar. Also the company has sales and service offices in Japan and Europe whose purpose is to develop niche markets, facilitate direct mill to end user transactions, and insure product expectations are met.

3.3.5 Secondary activities

Secondary activities are those functions that support primary value chain activities. Some firms develop secondary activities into sources of competitive advantage. For Interfor, financial management, information technology systems, strategy setting and employee management are significant support functions.

3.3.5.1 Financial management

One of Interfor's strongest competencies is the ability to efficiently manage their financial matters. Since the 1997 restructuring of the company executive, the company has managed the finances very well in spite of difficult markets, high operating costs and other economic environmental challenges. The company's balance sheet is strong, the debt is well

under control and cash flow from operations is strong. The company aggressively manages log and lumber inventories, minimizing trade capital and risk of inventory de-valuation. Section 3.5 provides further detail regarding the financial management of the company.

3.3.5.2 Information technology systems

The company has a strong information technology group that has been working successfully to provide reliable systems that meet the needs of operational business units. There are four core systems that manage the primary operational activities. One system manages the forest planning operations. This system is at the implementation stage and appears to be a robust, user-friendly system. The second system handles the individual log data from the time it is scaled at a sort yard to the time it is packaged and sold in boom form to a sawmill or external customer. The third system manages lumber production data at the sawmills by tracking inventories produced through to the sale to customers. The fourth system is a financial and budgeting system used in the woodlands operations. Each of these four systems has been built either by the IT group or in conjunction with them.

3.3.5.3 Strategy setting

Corporate strategy is set by a core group of senior executives who have been charged by the CEO with evaluating current assets and potential strategic growth opportunities. The company maintains a strategy of producing a diversified product portfolio for worldwide lumber markets. The intent of this strategy is to reduce overall revenue risk associated with individual markets. Over the last couple of years, the company has been well positioned and eager to capture good value growth opportunities. In 2001, the company purchased Primex Forest Products Limited, which included 2 sawmills and a remanufacturing operation. In 2004, it made attempts to acquire the coastal assets of Doman Industries and attempted to acquire Riverside Forest Products Limited, both of which the company eventually withdrew from. The company

was successful in purchasing the assets of Crown Pacific in Washington and Oregon, which included 3 sawmills and various other assets. In 2005, the company purchased the assets of Floragon Forest Products Molalla Inc in Oregon, which includes a SPF dimension sawmill and other assets.

It is apparent the strategic growth direction is to acquire available assets that represent good value. Recent acquisition targets were each distinctly different from the other, and would have resulted in a different company than each of the other two targets. Had the Doman Industries acquisition been successful, the company would have been a predominant Coastal company with significant forestland operations and a heavy product portfolio of cedar and whitewood industrials. Had the company purchased Riverside Forest Products, it would have been a company with significant forestland holdings and shared weight in North American dimension and Coastal Whitewoods, with the addition of a plywood products portfolio. In the end it purchased Crown Pacific and Floragon and ended up as a dominant North American dimension producer with a smaller proportion of forestland holdings.

3.3.5.4 Employee management

Since 1998, the company's financial performance has been poor and it has been forced to restructure and aggressively change as it strives to achieve a low-cost structure. During this enduring period of adjustment and downsizing, all matters of human resource management have required executive level approval. This includes employee compensation, new full time hires and other non-cash benefits. Although the tough restructuring period is almost over, most of the human resource decisions still require executive level approval. Operations managers and sawmill managers are not able to hire full time staff without approval and are encouraged to structure new hires on one-year contract basis to avoid long-term commitments and full benefit loadings.

3.3.6 Value chain conclusion

The firm creates value through converting undeveloped forest resources into lumber products for many international customers. Utilizing a structure that partially controls the coastal log production creates value along the chain by increasing sawmill recoveries, reducing costs and by controlling inventories. Strategically purchasing logs on the open market to supplement internal supply allows the firm to take advantage of market cycle opportunities and allows it to vary production and inventory volumes as necessary. Owning a variety of mills allows the company to maximize value from internal log supplies. The flexibility in distribution channels adds value by allowing the firm to meet customer needs and by allowing the firm to capture the cheapest transportation methods. The company does a good job of outsourcing non-core activities and continues to adapt to changing market conditions and make investments in core assets only. Much of the value created in the company is associated with the job the employees do, including log trading and financial management.

3.4 Firm Culture

The firm has a lean towards regulatory and bureaucratic structures, as defined by Dr. M. Wexler³⁴. The organizational culture is one where the employees are hardworking and committed to the direction of the firm. Many employees carry the belief that they are the corporation; it is not some faceless 'they' in a boardroom in Vancouver. This personal commitment to forwarding the interests of the firm is a value that has been instilled over years of downsizing and restructuring. Those employees that continue with the company have received years of reinforcement that they are an enduring part of the organization and that they are doing well.

The firm's decision-making style reinforces that each person is of value to the company. Employees at different levels of responsibility have different levels of decision making

autonomy, but at each of these levels, there is a general sense of trust between the supervisor and subordinate; that is the supervisor trusts the subordinate is acting in good faith and in the company's interests at all times. Employees of the firm have their own areas of expertise and responsibility, but they all look out for the interests of others, as the interests of the group are similar to the interests of the individual.

The employees, management, and directors share the core values of conducting themselves with honesty, integrity and professionalism and that they are responsible for their own success. The core values include a statement that the people are the foundation of the business, safety is a prerequisite for work; environmental integrity is of utmost importance; customers pay the way; and that returns to shareholders facilitate investment, employment and public benefits.

The company management and employees are encouraged to develop autonomy in influential industry organizations. The company has staff positioned in almost every industry committee and organization to ensure they have the ability to influence policy in ways that protect the company's interests.

The company's forestry and logging group on the BC coast employs many forest professionals that manage the industrial forestry operations. These employees have a large amount of operational autonomy that empowers them to make decisions on behalf of the firm without referring matters to higher-level decision makers.

The firm is regulatory and bureaucratic in matters of capital spending, some common expense items and in the management of human resources. Capital spending is approved in annual budgets, giving managers the ability to spend within those amounts. All new capital spending undergoes scrutiny through a capital request procedure where a sufficient case for the spending must be made. All requests must receive approval from higher management before purchases are made. Central staff persons also control smaller, common expense spending.

Top-level management is responsible for human resources. Only top management approves activities including hiring and salary increases. Generally, salaries in the firm are competitive, although individual consideration for a salary increase is difficult to receive as the firm has operated on an unwritten modus operandi that all employee salaries are frozen unless all employees receive a raise. Similarly, the salaried bonus plan only kicks in for all employees when the entire firm earns ROA greater than 5%. This makes individual reward difficult for business units that are earning good financial returns. Employees in well performing assets miss out on rewards for their efforts, despite the individual dedication and effort put forward.

3.5 Financial Analysis

3.5.1 Ownership structure

Interfor is a publicly traded company with shares that trade on the Toronto Stock Exchange. The company's roots go back to the 1930's when it was a single mill operation in the lower mainland. The company was incorporated under the Company Act in 1963. In 1977, William L. Sauder, through his company Sauder Industries acquired a controlling interest in the company. Sauder's shares are currently held by his family holding company Mountclair Investment Corporation. The public holds the shares not owned by Sauder. Sauder Industries is a privately held diversified forest products firm that sells value-added wood products in the North American market.

3.5.2 Industry comparison

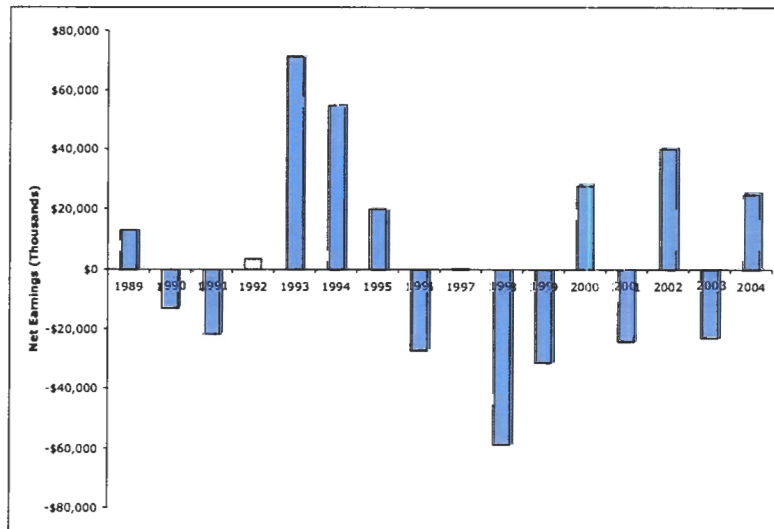
For the purpose of this analysis, financial data from a group of 8 Canadian companies with Primary or Secondary SIC codes in the same grouping as Interfor was compiled to create average values that can be used to compare against Interfor.³⁶ Interfor's data has been included as 1 of the 8 to ensure the industry averages are not skewed. The companies include: Ainsworth Lumber Co., Ltd. (TSX: ANS); Canfor Corp (TSX: CFP); Doman Industries Ltd. (TSX: DOM

A); Riverside Forest Products Ltd. (TSX: RFP); Tembec, Inc. (TSX: TBC); TimberWest Forest Corp. and West Fraser Timber Co., Ltd. (Canada) (TSX: WFT).

3.5.3 Basic earnings per share and net earnings

The company has had varied financial performance since 1989. Basic earnings per share has been negative many times throughout the past decade while the company has been progressing through a period of restructuring. The year with the greatest loss was 1998. Since 1998, earnings have been positive every other year as the market cycles and high costs continue to hinder acceptable financial performance (Figure 11).

Figure 11: Historic Company Net Earnings

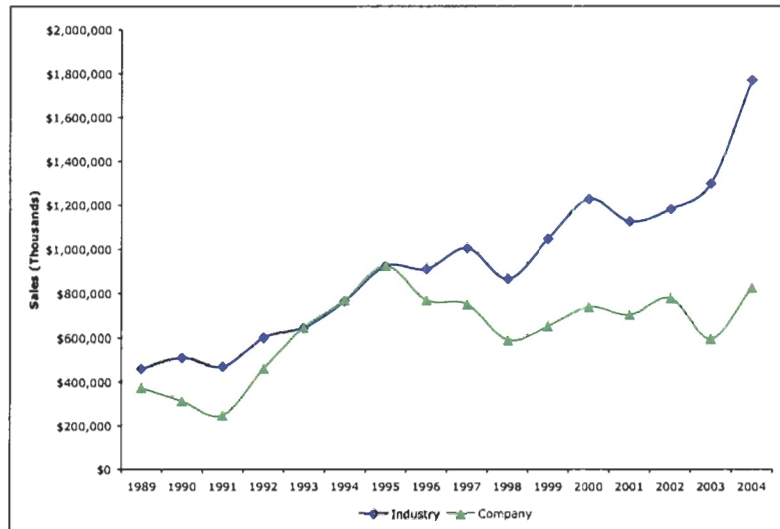


Source: Author; from data sourced from Mergent Online^{TMB7}

3.5.4 Revenues

For the period 1989-1995, Interfor's revenues grew aggressively due to strong lumber markets and major acquisitions. Following 1995, the demand for lumber in key markets including Japan and North America exhibited weakness, and in the second half of 1997, the Japan market collapsed. Interfor was matching industry sales growth until 1995 when the company's primary markets collapsed (Figure 12).

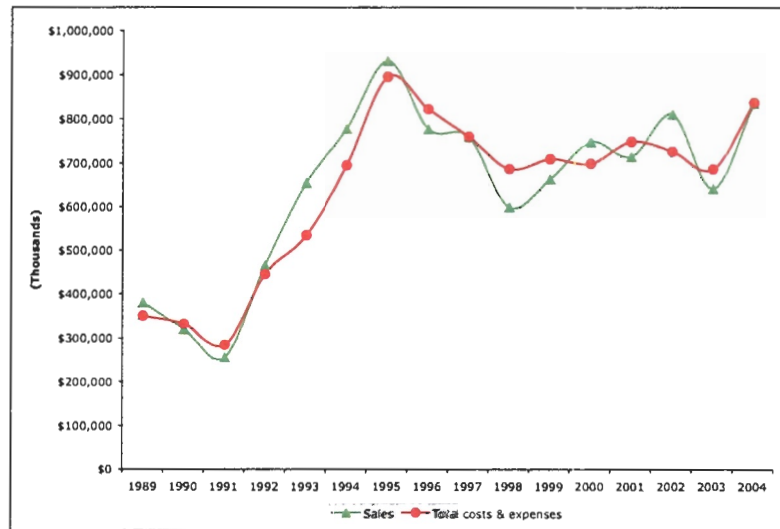
Figure 12: Company/Industry Sales History



Source: Author; from data sourced from Mergent Online^{TM38}

This period of low sales was compounded by the fact the company had established a high cost operating behaviour. Part of this was caused by a lack of cost focus during the period of high earnings in the mid 90's, a result of high log and pulp markets. During the years leading up to and including 1995, sales were greater than total operating costs and expenses (Figure 13). However, by 1995 the operating environment had changed for the worse caused in part by changes in provincial policy. The Province implemented the Forest Practices Code Act of BC, a rules based policy regime for operators on Crown land. This legislation increased the requirements of forest practices, removed operator flexibility and slowed the approval process for operators. Also, the Province's addition of "super stumpage" a year earlier continued to increase the cost of operations. The company was burdened with high costs that were not easily reduced. In 1993, the logging cost was about \$65/m³ and stumpage was about \$10/m³, resulting in a total fibre cost of about \$75/m³. By 1997 these respective costs were about \$86/m³ & \$24/m³, resulting in a total fibre cost of about \$110/m³.³⁹

Figure 13: Company Sales vs Total Costs & Expenses



Source: Author; from data sourced from Mergent Online^{TM40}

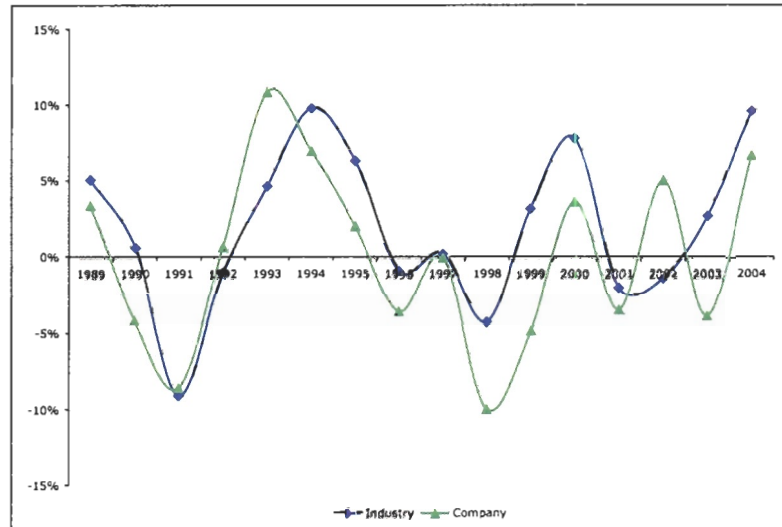
3.5.5 Profit margin and gross margin

Profit margins (net income over sales) have been low or negative as earnings oscillate around breakeven. Over the entire period, profit margins have ranged from a high of near 11% to a low of near -10% (Figure 14). This figure reveals the profit risk the company is exposed to, as earnings levels are volatile and cyclical. Interfor's profit margins have been lower than the industry average profit margin indicating some deeper level cost issues that may need to be addressed. A contributing factor may be that the efficiency of the company assets are falling behind that of the industry, a direct impact of constrained capital improvements over recent years.

Interfor's gross margin has averaged around 13% over the past 15 years and has remained at that level in recent years. Interfor's gross margin has been fluctuating as gross sales have been inconsistent and production costs have continued to creep upwards (Figure 15). Some of the cost creep can be allocated to the increasing stumpage costs the Province has been charging forest companies. In February 2004, the stumpage policies changed, lowering the overall cost of timber, but this has not overly reduced the production expenses. Recent capital investments in

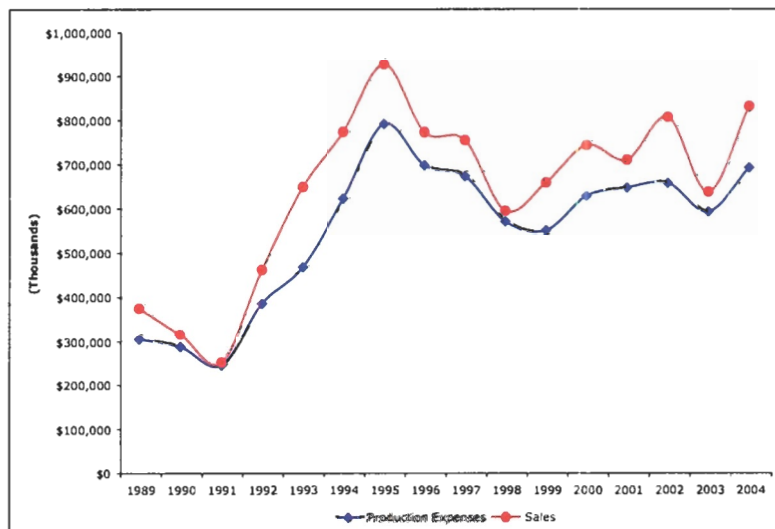
newer, low cost mills in the US and investments in some BC mills should lower or hold steady production expenses in 2005 and onward.

Figure 14: Company/Industry Historic Profit Margin



Source: Author; from data sourced from Mergent Online^{TM41}

Figure 15: Company Total Sales and Production Expenses

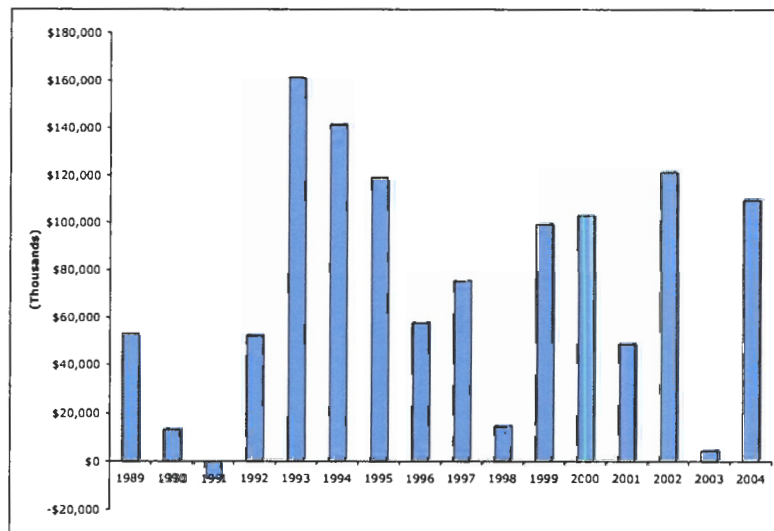


Source: Author; from data sourced from Mergent Online^{TM42}

3.5.6 EBITDA

Earnings before interest, taxes, depreciation and amortization have been strong over recent years (Figure 16). During years with low EBITDA, sales were also poor, indicating the business risk associated with lumber sales. A strong EBITDA indicates that the company has a good ability to generate earnings, but may not represent the true earning power of the firm if depreciation and amortization amounts are significant.

Figure 16: Historic Company EBITDA



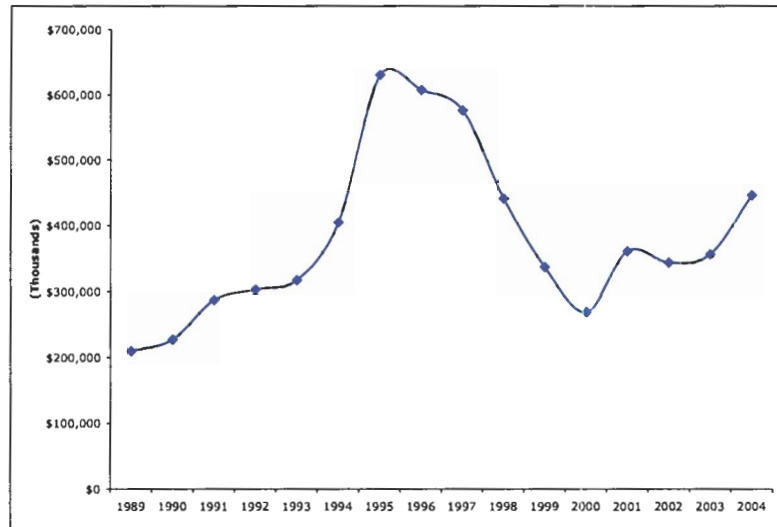
Source: Author; from data sourced from Mergent Online^{TM43}

3.5.7 Invested capital

Interfor's historic invested capital (defined as the sum of total debt and shareholder equity) has ranged significantly over the last 15 years (Figure 17). This can be attributed to the firm's acquisition and restructuring activities. In the early 1990's, the firm made acquisitions and increased trade capital amounts. In the late 1990s, the company restructured operations and aggressively managed financial matters. Since this period, the company has again proceeded to make acquisitions that result in increased levels of invested capital. As net earnings have been

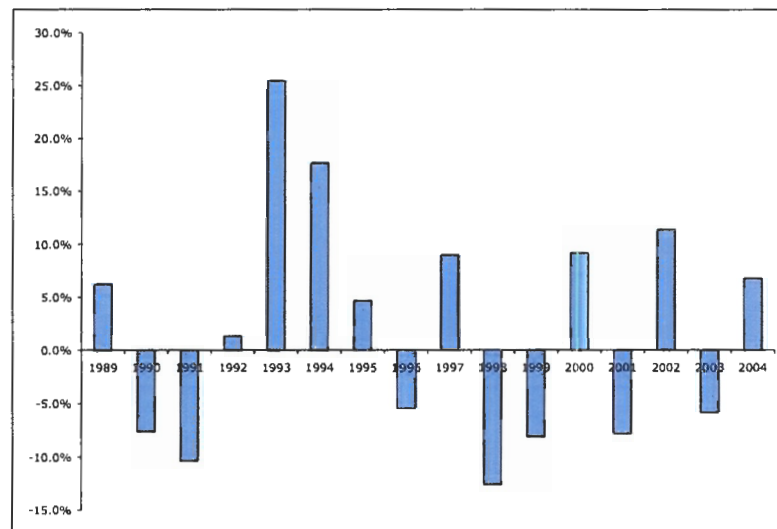
low and negative, return on invested capital has not improved despite positive work towards reducing non-essential assets (Figure 18).

Figure 17: Company Historic Invested Capital



Source: Author; from data sourced from Mergent Online^{TM44}

Figure 18: Company Historic ROIC

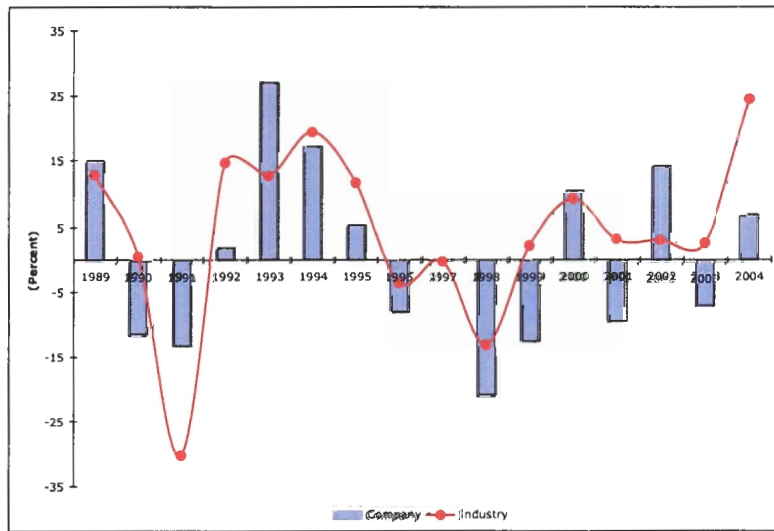


Source: Author; from data sourced from Mergent Online^{TM45}

3.5.8 Return on equity

Interfor's return on equity has been similar to that of the industry averages for the entire period of analysis although there are some key variances (Figure 19). Over the last 15 years, the company's return on equity averaged 0.6%. During the years 1999, 2001 and 2003, Interfor's ROE was negative despite efforts to turn the financial performance around and despite the fact that the rest of industry was earning profits. In 2004, the company earned profits, but failed to outperform competitors despite strong lumber markets. It is a concern that the company fails to do well in strong markets and indicates that costs are not as low as necessary to remain competitive.

Figure 19: Company/Industry Historic Return on Equity



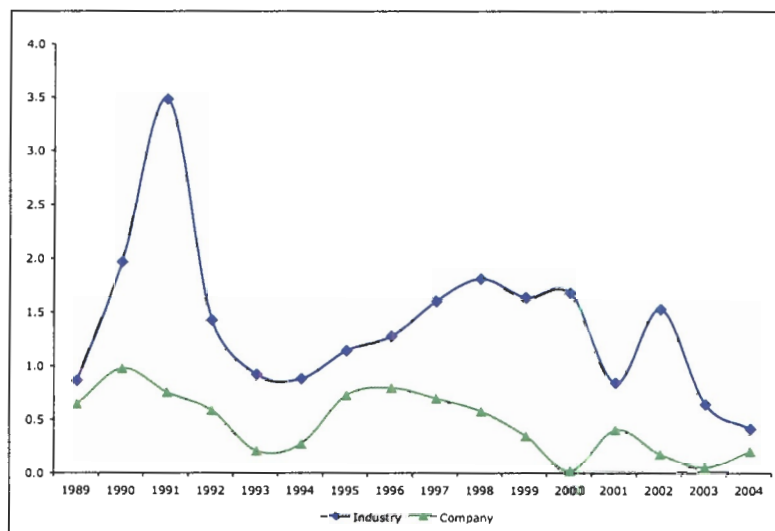
Source: Author; from data sourced from Mergent Online^{TM46}

3.5.9 Debt to equity

The industry's use of debt has been more extensive than Interfor's use of debt. Over the 15-year period of study, the average debt to equity ratio for the industry has been about 2.5 times that of Interfor's (Figure 20). Greater use of debt leads to a higher return on equity. However, during difficult years, it may also create liquidity problems and risk outside that of company's

own operations. The heavy use of financial leverage may burden a company as they try to meet interest payment requirements.

Figure 20: Company/Industry Total Debt to Equity

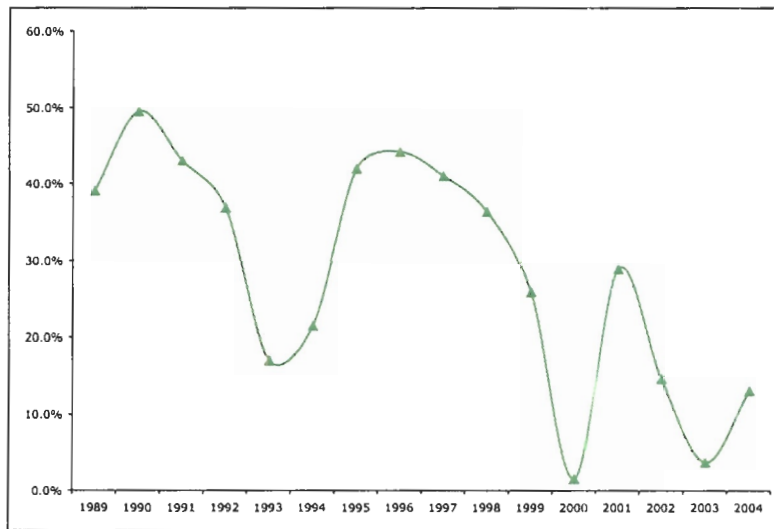


Source: Author; from data sourced from Mergent Online^{TM47}

3.5.10 Debt to invested capital

Debt to invested capital is a second way to analyze a company's use of debt to finance its operations. It is similar to the debt to equity ratio although the denominator of invested capital is the sum of the debt itself and shareholder equity. It is presented here because it is a key financial indicator for Interfor. For the period 1989-1998, debt to invested capital was high, averaging 37%; for the period 1999-2004, debt to invested capital was much lower, averaging 18.5% (Figure 21). Lower debt levels reduced the risk of insolvency during the period of poor earnings and it put the company in the position to seize strategic growth opportunities without having to stretch capital amounts beyond existing lines of credit.

Figure 21: Company Historic Debt to Invested Capital

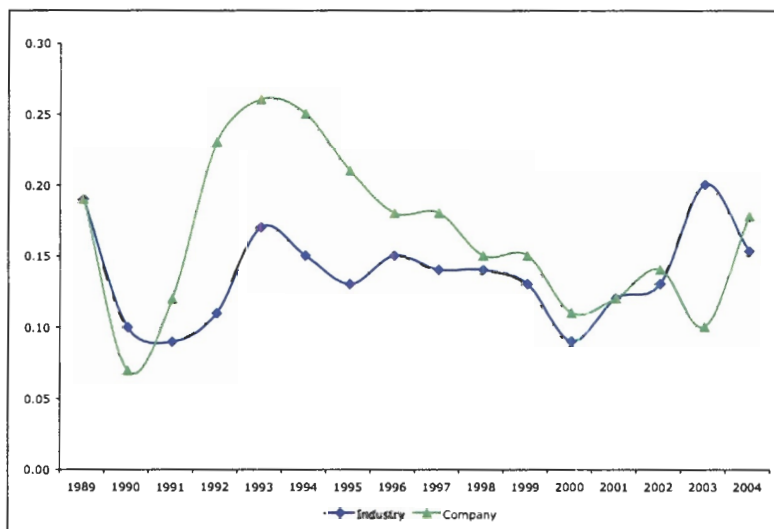


Source: Author; from data sourced from Mergent Online^{TM48}

3.5.11 Net working capital

Interfor's net working capital for the period 1989-1998 was much larger than the competitors. Net working capital is the difference between current assets and current liabilities, including current liability accounts purely financial in nature. Since 1998, Interfor's working capital to total assets ratio has been comparable to that of its competitors (Figure 22).

Figure 22: Company/Industry Historic Working Capital to Total Assets

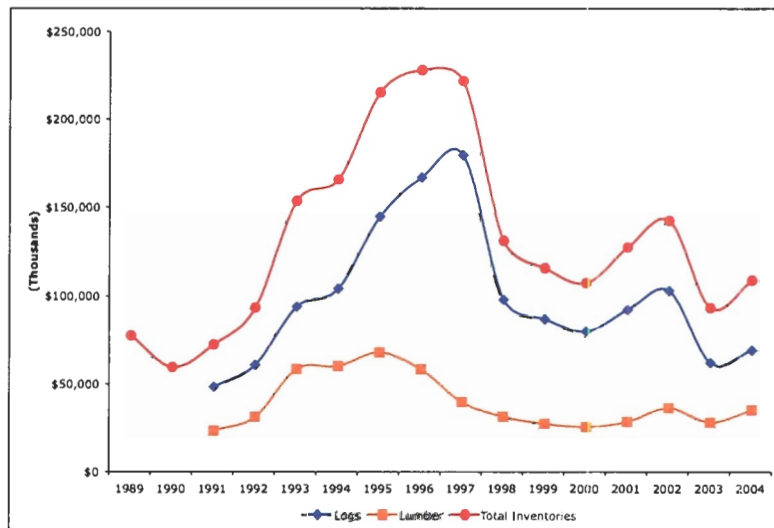


Source: Author; from data sourced from Mergent Online^{TM49}

3.5.12 Inventories

Management allowed inventory levels to rapidly increase during the period before 1998 in part because of the very hot lumber market during that time. Overall, the value of the inventories increased 3 fold from a low in 1990 to a high in 1996 (Figure 23). The rapid increase in log inventory appears to have been the main cause of the increase in total inventories, as lumber inventory did not increase substantially. For the years following 1998, log inventory was returned back to the levels held in 1992 and 1993 resulting in free cash flow that was used to reduce debt.

Figure 23: Historic Company Key Inventory Levels

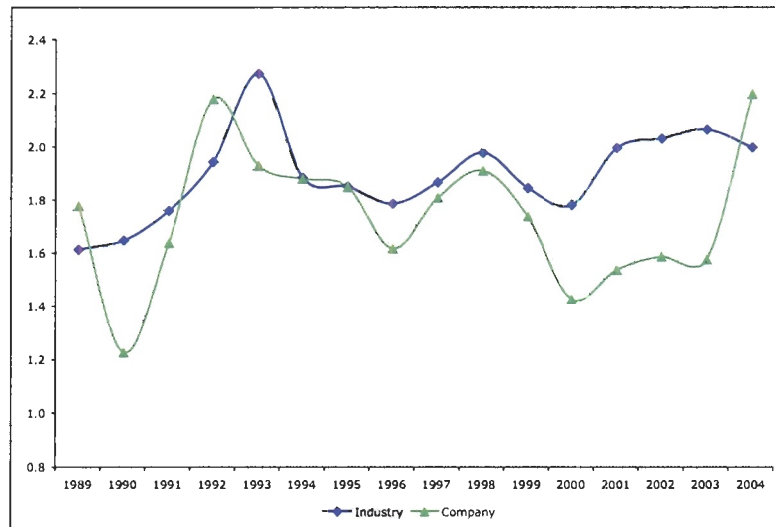


Source: Author; from data sourced from Mergent Online^{TM50}

3.5.13 Current ratio

Interfor's current ratio over the last five years has averaged 1.7, while the Industry's ratio for the same period averaged 2.0 (Figure 24). Forest products companies have high current assets in the form of log and lumber inventory, associated with a long cycle. Interfor's lower ratio is a result of tighter inventory management combined with low current liabilities attributed to the use of bank debt.

Figure 24: Company/Industry Historic Current Ratio Comparison

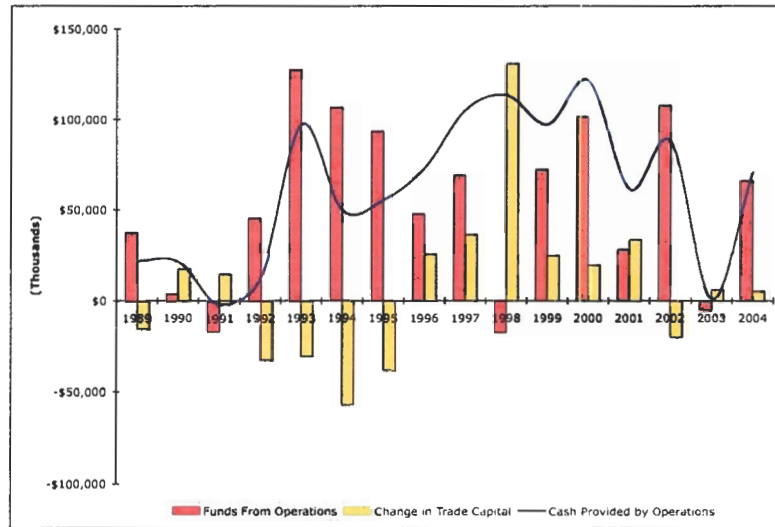


Source: Author; from data sourced from Mergent Online^{TM51}

3.5.14 Cash provided by operations

Cash provided by operations has been strong for Interfor, but at times for different reasons. Cash from operations has averaged around \$61 million per year over the last 15 years (Figure 25). For more than half of the years, strong cash provided by operations was supported by strong funds from operations ranging from \$70-\$125 million annually. However, the changes in trade capital over the years have had a large influence on the cash flows. During the years 1992-1995, negative changes in trade capital were indicative of increased investment in inventories and accounts receivable. For the period 1989-1997, an average of \$9 million was added to trade capital annually. In 1998, a very large positive change in trade capital of \$131 million provided by operations. In the 4 years following 1998, strong funds from operations and nominal positive changes in trade capital kept cash provided by operations high. The positive cash from trade capital since 1996 correspond directly to the substantial reductions in the total amount of trade capital invested in years 1992-1995.

Figure 25: Company Historic Cash Provided by Operations



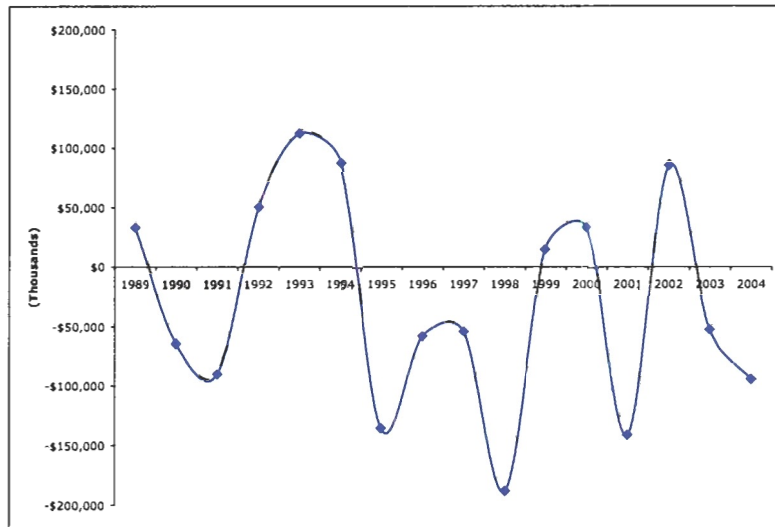
Source: Author; from data sourced from Mergent Online^{TMS2}

Positive cash provided by operations has had a positive effect on the other sources and uses of cash including cash provided by investing activities and cash provided by financing activities. Positive cash from operations facilitated the repayment of debt in years 1997-2000 and 2002. It also supported the 1995 and 2001 acquisitions observed in the negative spikes in cash provided by investing activities. Finally, cash provided by operations supports the ongoing reinvesting function of business in additions to plant, property and equipment, and additions to logging roads and timber amounts. Annual additions to these assets have been \$41 million on average for the period 1999-2003.

3.5.15 Free cash flow

Free cash flow is the cash available for distribution to financial asset holders in a firm after capital spending on worthwhile investments. Interfor typically generates negative free cash flows, averaging \$-27 million over the last 16 years (Figure 26). Company spending on acquisitions contribute to negative free cash flow as does inconsistent funds from operations.

Figure 26: Company Free Cash Flow



Source: Author; from data sourced from Mergent Online^{TM53}

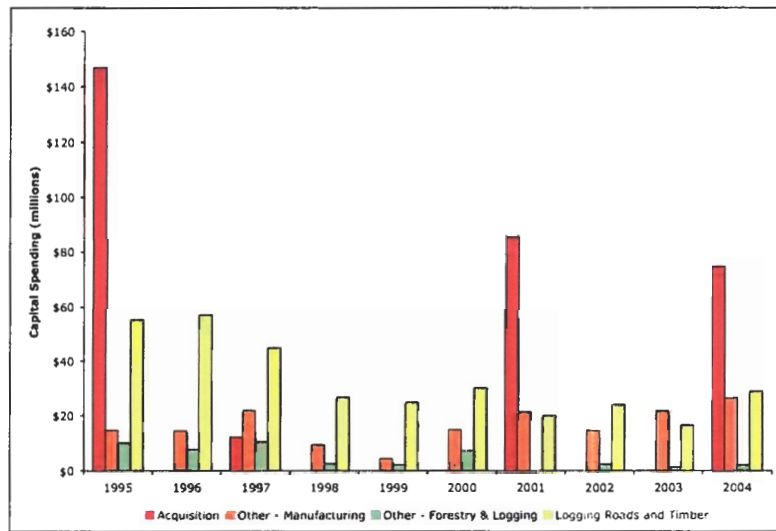
3.5.16 Capital spending

Capital spending is categorized into Acquisitions; Land, Buildings and Equipment; Forestry and Logging; and Logging Roads and Timber. Acquisitions cover purchases of other companies including: Weldwood in 1996; Primex Forest Products in 2001; and Crown Pacific in 2004. Acquisitions dominate capital spending every couple of years. Capital spending on logging roads and timber dominate the routine annual spending of capital averaging around \$33 million over the last 10 years and \$24 million over the last 5 years. Spending on manufacturing facilities averages around \$16.5 million annually over the last 10 years and \$20 million over the last 5 years (Figure 27).

3.5.17 Plant, property and equipment

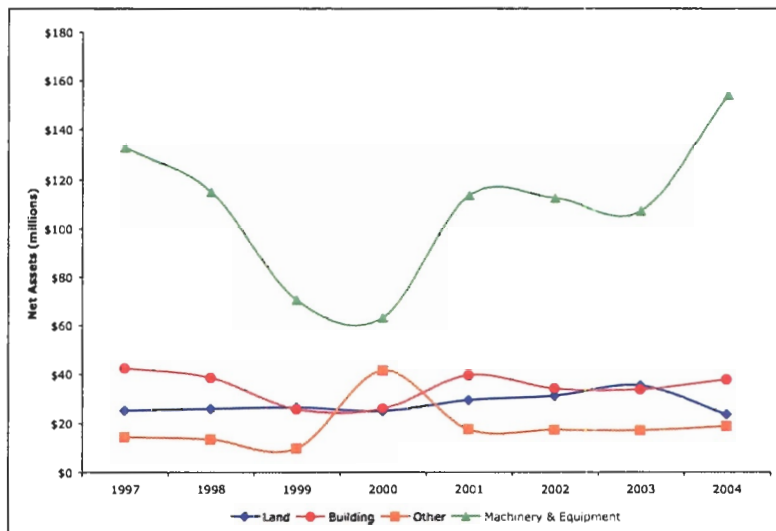
Interfor's plant, property and equipment is mostly machine and equipment assets, representing about 55% of the total net value. Land represents around 15% of the total and buildings represent around 18%. In 2004, the net plant and equipment was \$235 million (Figure 28). Notably, in 2004, current assets were valued at \$186 million and timber & logging roads were valued at \$82.5 million.

Figure 27: Company Capital Spending history



Source: Author; adapted from data in 1997-2004 International Forest Products Annual Reports

Figure 28: Company Plant, Property and Equipment



Source: Author; from data in 1997-2004 International Forest Products Annual Reports

3.5.18 Dividends

The company does not currently pay dividends. It is retaining all shareholder equity while it grows and makes high return, capital investments.

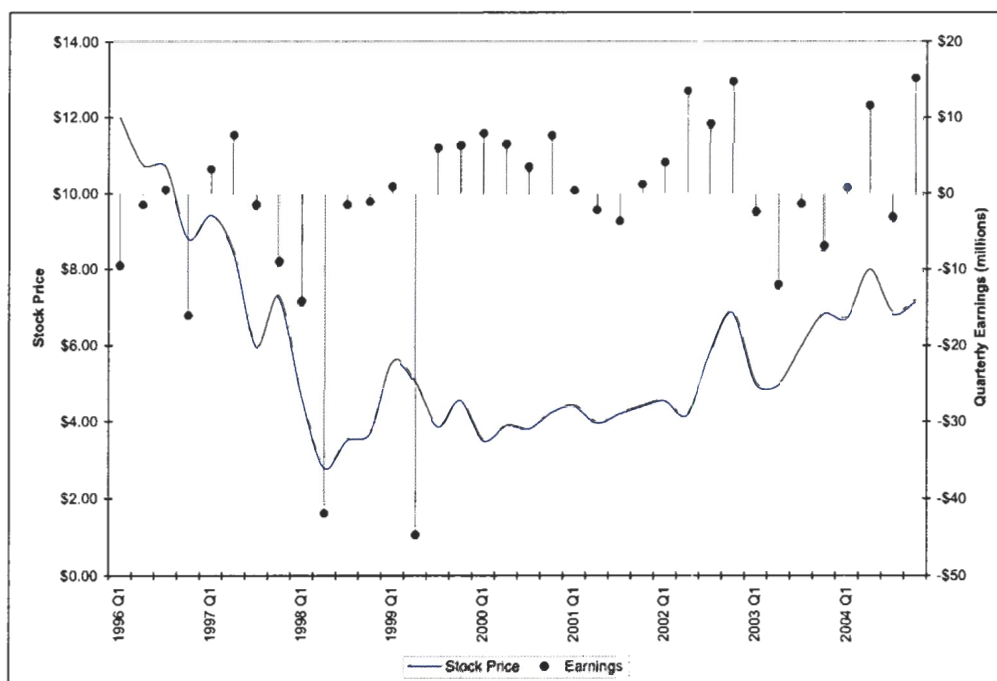
3.5.19 Stock Price

Interfor's stock price has been weak over the last decade (Figure 29). Inconsistent earnings, poor markets and high costs have forced restructuring over the last decade. Progress on cost reduction and growth in sales has lifted the stock upward from its low in 1998. At 2004 year-end, the stock traded at a P/E of around 13 and the market capitalization rests below the company's book value of \$7.66/share.

3.5.20 Levers of performance

Interfor's return on equity has been inconsistent in part due to negative earnings. Breaking ROE down into the 3 levers of performance and comparing the figure to the competitors can provide some insight (Table 2). Generally, Interfor's profit margin is lower than its competitors although its asset turnover is noticeably larger. The key distinction in these 3 levers is Interfor's financial leverage. Interfor uses far less debt in the operation of its business than its competitors. As presented earlier, having low debt levels have kept the company's interest payments low during periods of market weakness and allowed the company to grow without exceeding existing credit lines. However, lower debt levels also contribute to lower ROE. This may be an opportunity for the company. The low debt levels have come at the cost of not reinvesting in its assets over the past few years, leading to lower efficiencies and higher costs. In turn, this has led to lower profit margins and sawmill curtailments during periods of soft demand. Increasing debt to finance asset improvements may be a way to adjust the levers towards higher return on equity. Low debt levels also give the firm the power to act opportunistically by purchasing weak properties during periods where the industry sector, and stock prices are low.

Figure 29: Company Stock History and Quarterly Earnings



Source: Author; from data in 1997-2004 International Forest Products Annual Reports

Interfor has many options when it comes to shifting the ratios in order to increase ROE.⁵⁴ Currently, financial leverage is low and could be increased easily by improving assets or making acquisitions. However, having low returns of 0.6% on average over 15 years places the company in the precarious position of destroying shareholder value by borrowing at prime plus and returning near zero on the capital borrowed. The company needs to be very strategic in borrowing for high return assets, or have the discipline to not borrow at all. Simply increasing financial leverage for the sake of increasing the ratio would not be fiscally responsible behaviour.

Interfor's asset turnover has historically exceeded that of competitors. The company keeps asset turnover ratios high in part by retiring the use of underperforming assets. By retiring these assets and removing them from the books, the company increases its asset turnover ratio as the sales previously produced by the retired asset are produced by another operating asset. Since there has been a general excess of sawmill capacity in the company and throughout the coastal industry, this has been possible. Consolidating mill capacity helps lower fixed costs at the

operating mills by allowing them to operate at or near full capacity levels. Further, making capital investments in the mills will lower variable costs by improving efficiencies and improving production flexibility, reinforcing a cost competitive position.

Table 2: Levers of Performance

	Earnings/ Sales	X	Sales/ Assets	/	(1-D/TC)	ROE
Company 2002	4.86%		1.5		0.56	13.3%
Company 2003	-3.55%		1.3		0.77	-6.1%
Company 2004	2.96%		1.5		0.67	6.6%
Ainsworth 2004	19.24%		0.6		0.21	58.3%
Canfor 2004	9.69%		1.1		0.50	21.4%
Tembec 2004	1.02%		0.9		0.30	3.1%
West Fraser 2004	8.83%		0.6		0.45	11.9%

Source: Author; from data sourced from Mergent Online^{TM55}

It is important to note that these ratios do not necessarily exist independent of each other. Should the company use debt to increase assets, an increase in the financial leverage ratio may be offset by a corresponding decrease in the asset ratio. It depends on the amount of sales that accompany the assets purchased. This would be a good decision as long as these 2 levers in combination go up. For example, the company recently purchased the assets of Crown Pacific in the US for approximately CDN\$97.5 million including working capital. It is estimated the assets will add CDN\$120 million in sales.⁵⁶ Pushing these numbers through the asset turnover and financial leverage ratios gives a combined ratio of 2.91 compared to the current 4-year average of 2.49. The acquisition would have a positive effect on ROE as long as the company's profit margin does not subsequently decrease.

With respect to the financial lever of profit margin, net income divided by sales, there are a couple opportunities here. The first has been mentioned above in the discussion of trade capital. Any capital injections that can reduce operating costs will help improve net income and increase the profit margin. Capital can be directed at value added facilities that increases product value

and revenues per unit. Also, capital can be invested in technologies that improve recoveries, squeezing more products out of the same raw inputs. The company has also used political lobbying to receive policy and regulatory reforms in the areas of Provincial stumpage rates and Provincial laws governing the forest practices. Both efforts should result in lower future costs and expenses thereby increasing the profit margin ratio.

In 2000 and 2002 Interfor had profit margins of 3.7% and 5.1%.⁵⁷ If the company can return to this level in future years and the 5-year asset turnover and financial leverage figures of 1.47 and 1.70, Interfor would be able to achieve consistent return on equity of about 11.0%.

3.5.21 Financial analysis conclusion

International Forest Products Limited has endured both good and bad economic performance over the last 15 years and it has struggled with managing its growth, sales, trade capital and costs. Executive restructuring has set a path towards improved financial management. Cash flow from operations has been strong and used to reduce debt. Trade capital has been reduced through diligent management of the trade capital accounts. Because the company's profitability is linked strongly to costs, the company should continue to work on reducing costs and expenses to reduce the risk of negative returns and to ensure a globally competitive position. Through strategic and disciplined use of cash flows, investment in high return assets that increase the ROE financial levers of performance can be made.

4 ISSUES

The company's net earnings are inconsistent. During the period 1996 to 2004, 17 of the 36 fiscal quarters have been negative earnings.⁵⁸ Recent performance has been similar, 2001 and 2003 were years of losses; 2002 and 2004 were years of profits. Much of this fluctuation is due to the volatility of the lumber markets, however there is more occurring with the firm than simply market risk.

The company's fundamental ability to generate operating earnings is weak. Gross margins have averaged 12.3% over the period 1998-2004, while profit margins have been significantly less, averaging -1.4% over the same period.⁵⁹ The variance between gross margin and profit margin provides insight on the firm's ability to handle variable costs compared to fixed costs. Most production expenses included in the gross margin calculation are variable costs, while the profit margin carries the variable costs and fixed costs of operating. The fact that the company's gross margin is always positive shows that it has good ability to control variable costs. The fact that the profit margin is negative indicates that the company's fixed costs and one-time items are less controlled. It can also be concluded the company's gross margin is not wide enough to allow for necessary operating costs. Two of the more exemplary firms had gross margins well above Interfor's margins. Canfor had gross margins of 27% and 40% for years 2003 and 2004 and West Fraser Timber delivered margins of 33% and 43% for the same years.⁶⁰ Interfor's respective margins were 7% and 17%.⁶¹

There are seven general areas of opportunities where improvements can lead to a better fit with a low cost strategy, more consistent earnings and better coordination between business units leading towards higher degrees of reinforcing activities. One, manufacturing investments

have been low and have resulted in sawmills employing inefficient technologies. Two, use of debt has been conservative and primarily used for major acquisitions instead of investing in existing mills. Three, labour costs at the company's British Columbia facilities are high and must be reduced. Four, logging costs in the BC coastal region are high and the focus must be on cost reduction. Five, the coastal supply chain involves balancing profit and cost based decisions while managing internal and external purchases and sales; improving decision-making can lead to a stronger, more reinforced business. Six, the marketing and brand management could focus on a few efficient core family brands. And finally, market diversification efforts can move towards balancing markets to avoid high risk.

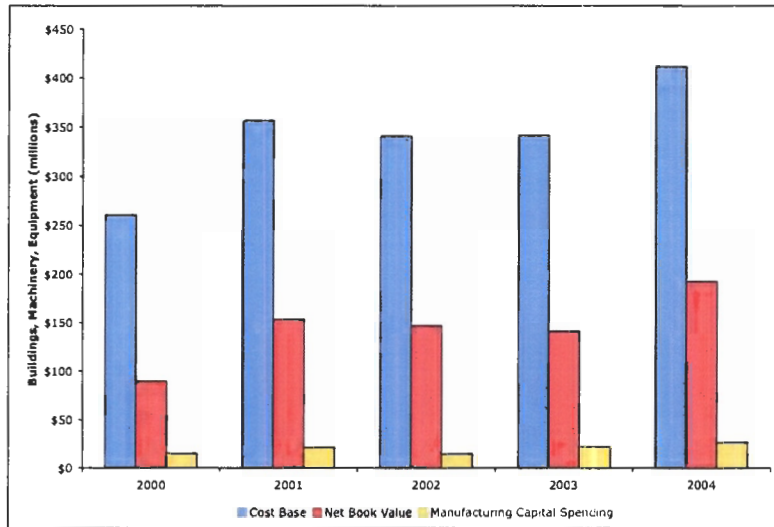
4.1 Manufacturing Investments

One of the fundamental issues is the low level of investment in existing sawmills. Over recent years, the company has altered its operations to reduce costs by closing underperforming assets, consolidating operations, and controlling expenses and capital investments. Mills have become inefficient as a result of under investment. The constraint on capital spending was necessary while the firm restructured, resulting in key consolidation and optimization decisions, but further avoidance of investment will only serve to continue inefficient operations. The company has also made acquisitions of facilities that are low cost and complementary to existing production plants. As evidenced by low gross and profit margins, the company has moved forward with this strategy, but consistent earnings have yet to materialize.

As the company moved through restructuring, it constrained capital investments in BC sawmill assets. This lack of investment put the company at a significant cost disadvantage compared to its competitors as evidenced by the company's lower margins. Capital investment has not been significant, and generally has been lower than the depreciation amounts as net book values have been declining despite modest manufacturing capital spending as shown in Figure 30.

Low capital investment in core facilities contributes to high costs, as the plants do not employ the latest technologies available. Utilizing new technology is a key industry success factor and must be used to hold off competition from new entrants that are built on newer technologies.

Figure 30: Building, Machinery and Equipment assets



Source: Author; from data in 2000-2004 International Forest Products Annual Reports

The company directs large capital amounts at acquisition of additional sawmill capacity without strengthening its current assets in a meaningful way. The asset increases in 2001 and 2004 reflected in Figure 30 show the value of acquisition of new plant and equipment, including a recent purchase in 2005, totalling nearly \$225 million. In contrast, capital spending on manufacturing assets totalled around \$85 million between 2001 and 2004. The acquisitions move to strengthen the business, increasing it diversity, but also put the company at risk of under investing in existing facilities that need major capital commitments.

In the coastal operations, the company has to achieve a balance between the capital consumption by sawmill facilities and by logging operations. Over the past 10 years, the capital spending on forest roads and timber have been larger than that of capital investments in the sawmills. Altering this pattern can free up more capital for investment in manufacturing assets.

A second way to reduce the capital investment in roads is to download the cost to the contractors. If logging operations can be managed with a higher degree of certainty, logging contracts can be arranged in a way that covers the full cost of road construction and logging. Contractors would absorb the cost of construction in exchange for certainty of operations. Further, placing the road construction responsibility on the party that will be using the road eases the company's need to manage quality and scheduling of the activity. The company can provide the necessary approvals and ensure environmental standards are met, but allow the contractor to worry about cost minimization and operational profit and risk. Currently, the company bears the risk and handles additional costs of dealing with quality issues between multiple parties.

4.2 Debt Management

The company's use of debt to finance operations is low. In the past, long-term debt has been used to finance acquisitions; Weldwood, Primex and Crown Pacific. All other uses of debt including for changes in working capital have been completed with short-term credit lines. The management pattern has been to borrow funds with long-term facilities to finance acquisitions and then to immediately pay them off in the following years using the company's strong cash flows. For example, the Primex assets were purchased in 2001 for \$100 million with long-term debt, and paid off in 2002 and 2003 with two instalments of \$50 million each.⁶²

The company has rarely used large amounts of debt to finance investments in existing facilities as almost all other capital spending has been financed through cash flows from operations. Only recently has the company used debt to finance a major mill upgrade with its investment in the Queensboro mill. The company runs with higher equity than its competitors does, that is, the financial leverage is low and conservative. This does not fit with a low cost strategy. These strategies typically require high investment to stay current with technology improvements to remain efficient. Compared to the competition, Interfor's debt to equity

position has been consistently lower year after year. This contributes to low ROE and suppresses its ability to compete, as reduced efficiency is a consequence of maintaining low debt. Increasing debt for the sake of increasing leverage alone is not the solution, but making meaningful investments that increase operating efficiencies is a wise use of debt and is necessary for success, so long as the debt levels remain manageable.

4.3 Labour

Labour costs in BC are high and the company must continue to work towards reduction in these costs. Most of the labour force is organized under the United States Steelworkers Union. In 2004, no manufacturing time was lost due to labour disruptions, indicating the company is doing a good job working with labour. The labour issue is complex and worthy of much discussion, but a few key observations can be made.

The company's operations in the United States have low cost, flexible labour. Diversifying into the US is a good way to reduce the supplier power of the Union. By owning plants that manufacture similar products for the same markets as the BC mills is a good way to neutralize labour power. If the company considers building in this redundancy and dual capacity, any labour disruptions that have the potential to impact customers and sales can be avoided in short term by increasing capacity at the alternate plants. Further, having plants in various labour regions can serve to provide real cost data that can be used to achieve low cost operations at all plants through learning effects and through real evidence during labour negotiations.

A second observation is that failure to make large investments in technology improvements impacts operations by keeping labour inputs and labour dependency high. This in turn gives labour power and as the labour force remains large, it also results in increased employee overhead fixed costs and management inputs. Using old technology not only results in a high labour dependency, but also a dependency on highly skilled, expensive labour. New

technology serves well to reduce jobs overall as well to provide the opportunity to replace jobs requiring high skill with jobs that require less skill, resulting in lower costs.

4.4 Logging Costs

Logging costs on the Coast are high. The company and the Province have been working diligently over recent years to revitalize the industry by removing cost drivers from the system. To reduce costs, the company is moving towards fully outsourcing logging operations to contractors. In doing so, the company plans to gain efficiencies in overhead, lower use of capital, and lower logging rates.

Efficiencies will be gained in overhead costs, as there will be more consistency in the accounting process, supervisory activities move towards single line reporting structure, and the need for infrastructure and operational support systems is reduced. The accounting and support systems required for company camps is far greater than for contractor camps as tasks such as managing labour payroll and plant and equipment asset depreciation all require dedicated staff. The supervisory activities under the current model have multiple reporting structures that lead to inefficiencies such as increased bureaucracy and miscommunication. Simplifying this structure eliminates these issues and consolidates operational autonomy; a key trait of a cost based strategy. Overhead costs including infrastructure assets such as equipment shops, and maintaining parts inventories will also be eliminated.

Full outsourcing of logging operations will reduce the capital employed in logging operations, but more importantly, it should result in more efficient, lower cost operations as contractors generally make more routine capital investments in equipment that improve their efficiencies. Capital constraints on company equipment result in an inefficient equipment complement. On the other hand, contractors have managed costs by making routine capital investments in new equipment, resulting in less labour input, less break-down time, higher

productivity, and higher log recovery. The company also benefits by using contractors that use new technology as log quality is generally higher in camps that use new mechanized harvesting equipment opposed to older conventional logging equipment.

The greatest opportunity for lower costs is a move to facilitate contractor consolidation and create more consistent operations. The goal of this transition is to move towards a more steady state of operations where better, longer term planning decisions can be made with higher certainty. Contractor consolidation will result in contractors with sufficient scale such that costs will be spread over larger volumes of timber, evenly distributed over the year, and with less down time between different jobs, which results in lower fixed costs. Over past years, logging operations have been more ‘stop and go’ opposed to steady state. This has caused contractors to pad costs, as the risk elements were higher. Providing more certainty in operations should allow contractors to reduce the amount of risk included in their rates. This strategy will also provide opportunities to download other costs to contractors, such as road construction.

4.5 Coastal Supply Chain Management

Operating the BC coastal forestry and logging operations has historically been a source of strain on company earnings as the cost of timber extraction has been greater than the market value of the timber itself. The strategic rationale for a sawmilling company to be vertically integrated into the logging operations includes securing access to a scarce resource, improving the coordination of supply chain activities, and capturing upstream profits. Possible costs of integration include assuming additional cost risk, experiencing difficulties balancing capital resources, increased bureaucracy, and risk of underinvestment. The concern is whether the costs associated with this integration outweigh the benefits gained. This leads to a discussion of possible improvements that can strengthen the tie between the woodlands operations and sawmill operations.

The woodlands business operates as a profit centre with a heavy lean towards cost centre goals. As a profit centre, the business manages affairs based on generating positive operational margins. As a cost centre, the business manages affairs based on the needs of the sawmill fibre requirements. The two orientations make managing the business difficult. Currently, the principle factor used to decide whether a block is harvested is its block level profitability. Operating in this manner does not necessarily consider the over riding supply needs of the sawmills, that is, a block that contains little timber for internal sawmills may be harvested, positively contributing to the business, but using up internal fibre sources that could otherwise be used to supply internal sawmills. Supply short falls are filled through external purchases at market price.

Managing with a profit orientation is necessary to ensure fibre costs are not greater than what is available on the open market. It also works to measure the upstream profits captured by the company. However, placing excessive weight on profit orientation has some negative effects. Lowering harvest volumes in operating areas to ensure profit margins are achieved increases costs by increasing the proportion of fixed costs allocated to the lower volume of output and by increasing some variable costs, such as the costs of mobilization. Focusing on positive margins also risks underinvestment in capital assets, keeping efficiencies low. This has been the case for company logging operations over recent years. Lack of investment has reduced fixed costs, but increased variable costs associated with higher maintenance costs and increased down time.

Placing increased weight on external supply also dampens profitability, as external sources are generally lower quality than internal supply. Maximizing internal supply should be a core strategy of the company while being attentive to profitability. While purchasing cheap external fibre may be attractive, it weakens the strength of integration. Woodlands operations should be scheduled to meet internal demand at the lowest possible cost. External purchases should undergo increased scrutiny and should be evaluated for quality similar to that of internal

booms. Increased internal supply will decrease dependency on external sources, facilitating increased external scrutiny.

Currently, much of the external timber supply is purchased in packaged and delivered boom form in the Fraser River. The advantage of this is it is a readily accessible source of fibre that keeps sawmills operating during periods of low internal supply. The disadvantage of this is the sawlogs may be lower quality and off-length. If the fibre is sourced further up the supply chain, Interfor's specifications can be used in the process of log manufacturing, resulting in better returns for the sawmills. One way this can be completed is by taking a more active role in working with timber sale operators and committing to purchase their timber in advance of harvesting. This is one way that the individual parts of the business can be used to reinforce themselves as Porter's degrees of fit discussion suggests. All things being equal, an external purchase made in Vancouver or made from a standing timber sale would result in the same market price for the timber. However, if timber sale logs are processed at a company dryland sort, it would result in higher fibre quality and greater total value to the company than would logs produced at an external sort.

The company can also learn from the business units that do not have internal supply. These units encourage external sources to produce logs with desirable characteristics by providing pricing incentives upfront before the logs are manufactured. In the Coastal business, the suppliers have historically held the power as the supply itself has been more important than its quality and traders have been forced to pay similar amounts to external sources as they do for internal sources that are of far better quality. Increasing internal supply and reducing external supply will reduce supplier power.

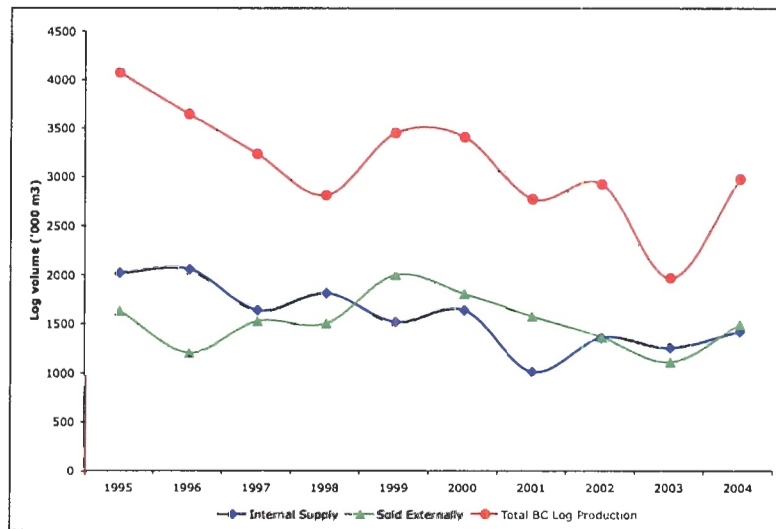
Processing external timber through existing facilities will result in lower fixed costs and the contractors who get the work will enjoy lower overheads as their volumes are increased from

the external work. The company can also utilize the current staff to manage external sourcing as staff engineers are familiar with timber types and values and are able to coordinate operations well with their own activities. Although workload may be increased, higher quality timber supplied to the sawmills will outweigh the cost of the extra workload.

The large amount of external sales is an important issue for the company. The woodland operations produce a large amount of timber that is sold to other companies in part because the fibre supply is heterogeneous and in part because of profit oriented decisions. In all, about one half of the company's annual log production is sold externally to other forest product firms (Figure 31). This timber is made up of species and qualities that are not utilized by internal facilities or because they have more value to other producers. By selling large amounts of internal production to external sources, the company exposes itself to revenue risks not directly associated with its own product lines. Revenue from log sales ranged between 14% and 26% of total sales over the last 10 years.⁶³ During good log markets, sales revenues are strong, but during poor markets the company suffers. The strategy concern is that selling logs is not the company's core business function, yet it has a profound effect on the company's profitability.

Producing logs for external markets is a result of the profit orientation behaviour of the woodlands operations and is influenced by the make-up of the companies timber supply. Being profit oriented, the woodlands have typically engaged in logging stands of timber that earn positive margins, irrespective of whether the timber is destined for internal consumption or external consumption. For example, woodlands maximize value by selling high quality Douglas fir logs to poles, piling, and plywood manufacturers. The company could saw the same logs at its own mills, and at times does during periods of short supply, but they may not be able to return the same value to the log compared to selling to the outside party. Similarly, all cypress logs are sold externally as the company does not have a sawmill that can efficiently saw cypress, nor does it have a market for it.

Figure 31: BC log production end use



Source: Author; from data in 1997-2004 International Forest Products Annual Reports

Compounding the profit oriented nature of woodlands is that many of these species cannot avoid being logged as the timber mix on the coast is heterogeneous; that is many different species and qualities grow on the same sites and are harvested at the same time when logging occurs. Logging operations can work to avoid stands that are not destined for internal consumption, but full avoidance is difficult. A good strategy would be to build the company's milling capacity to match the available internal supply. Possible acquisition targets would include a plywood mill, a pole and piling mill, a cypress sawmill and cedar shake and shingle mill. With the exception of pulp volumes, these facilities represent a large portion of external sales, and generally, all are harvested with positive margins. Making these types of acquisitions would strengthen the internal supply chain for these mills and would allow the woodlands to focus on balancing supply issues while avoiding pure profit-based decisions that do not result in downstream benefits of integration. It would also work towards a goal of maximizing internal log supply and minimizing external purchases by keeping more log flows internal. Although outright acquisition of these targets is suggested, taking partial ownership has the same effect.

4.6 Marketing

As a low cost producer, marketing costs must be kept minimal to keep costs down. In the area of marketing, the company has a good strategic fit with low cost strategy as it does not overly invest in advertising and promotion and it works in collaboration with other firms where possible to reduce costs. Some marketing efforts are so large that the firm must work with other firms, as the costs are sufficiently high that they act as market barriers. For example, the effort to recover a hemlock market in Japan involves re-branding the product with a different name, changing customer perception of the product, and working with local government to update the building code for product.

The company operates a number of branding strategies including use of individual names and blanket family names, both of the company and of the industry group. For example, the firm operates under family brand names “Interfor” and “Interfor Pacific”, a separate family name for some cedar products under the “CEDARPRIME®” name and uses individual product brands for Cedar decking including “Regal” and “Elite”⁶⁴. The Adams Lake production facility markets its products in Canada and the US under the facility name “Adams Lake Lumber”, with no association to the company family name. The company also brands products using local industry association brands of the Coast Forest Products Association and the Western RedCedar Association, “Canada Tsuga” and “Real Cedar” respectively.

The advantage of using many different brands is that the company reputation is not directly associated to a product. Indeed, part of the reason the company has so many brands is due to the many environmental actions in the late 1990s which caused the firm to actively separate the firm name from the products. The environmentalists were upset over company logging practices in sensitive coastal regions and lobbied the company’s markets to avoid certain products that came from these areas.

However, the disadvantages of multiple brands may outweigh the advantages. Multiple brands are expensive to market; they may lead to lack of brand awareness; they fail to communicate positive corporate qualities; and may result in loss of market share. Marketing a brand is expensive, especially in many large global markets and in many cases it is cost prohibitive. In efforts to reduce costs, marketing budgets are constrained resulting in low and ineffective promotion and advertising. Having multiple brands compounds the situation as the budgets are divided among many efforts.

Family brands work well to mitigate many of these deficiencies while remaining low cost. If the company has loyal customers and enjoys some level of brand equity, having a family brand promotes the company's entire product line. Further, in a cyclical market such as the softwood lumber industry, recognized brands maintain higher demand in soft markets than do products with low recognition. Family brands are also economical as all expense made to promote the brand is retained in the core reputation and is transferable to new product lines as the company grows.

The company is in a position where they could benefit by reducing the number of brands it uses. Although it may be most cost effective to reduce the brands used down to one family brand, this would not be reasonable given the variety in quality of some in the company's products. For example, it would be poor decision to mix the brand for the US dimension lumber with the brand used for the premium cedar products. What is more reasonable is to reduce the number of brands down to a few key brands.

The company has many customers that exhibit loyalty for the product and has developed some brand equity. Transferring those values to a fewer number of brands would allow the company to introduce new products as it grows in production capacity. From an environmental perspective, the company has done a lot of good work over the last decade to improve its

performance and it is now in a position where it has a good story to tell. The best way to leverage the environmental message is to put it all into key brands, and sell those brands. Attaching the message to the large number of brands currently employed is inefficient and costly.

Combining all of the brands into fewer brands will improve efficiencies. The company puts much weight on the association brands in the offshore market, making the company specific brand of somewhat lesser importance. In the North American market, the brands stand alone, and would benefit from increased investment. The market for wood products is not expected to grow extensively, so any growth in market share must come from acquisitions or from other competitors. Developing market awareness through efficient promotion and advertising a family brand is one way to capture market share from other firms.

The company's distribution chain also favours fewer brands. Use of key brands helps retailers and distributors recognize products and keeps customers asking for it. It makes products easier to move if the distributor is able to sell products based on the company's reputation opposed to selling undifferentiated products.

4.7 Market diversification

The company has been dependant on key markets for its success, yet these markets are all subject to varying risk and volatility. To protect itself from the risk, the firm must diversify its product offering and diversify its market dependence. Currently, lumber sales revenues are dependant on 3 key markets, the USA, Japan and Canada. In 2004, US shipments account for 44% of lumber sales, Japan 28% and Canada 18%.⁶⁵ Further, these market shares have changed significantly over recent years. Compared to 2002, the company's lumber sales have increased 39% in the US and increased 59% in the combined region of the UK and Europe. Japan and Canadian sales have declined 16% since 2002.⁶⁶

A number of concerns can be raised regarding the country profile. The company's weight in the US can be viewed as a positive attribute in the strong economic climate with US housing starts at record highs and interest rates at all time lows. Of concern in the US market is the exchange rate fluctuation, the softwood tariffs, and the overheating market. With the long-term trend for the US/Canadian exchange rate heading toward a strengthening Canadian dollar, the Canadian based production will be exposed to lower margins as US sales lessen. The US anti-dumping and countervailing duties tariffs also reduce profit margins on the Canadian shipments. And there is increasing concern that the strong housing economies are overheating to the point where a strong correction may be inevitable in the near future. A correction will lower demand in softwood lumber, impacting earnings of companies dependent on the market.

The company has had to also absorb the costs of US antidumping and countervail duties in recent years. These costs act as an incremental fixed cost on all US sales. For the years 2002-2004, the company deposited upwards of \$82 million in tariffs to the US government amounting to 1% of total sales revenues, 5% of all lumber sales and 13% of US lumber sales.⁶⁷ This impacts the contribution of all US bound Canadian lumber shipments significantly, a major issue given the company's growth in this market. Without these duties, the company's profit margin would have increased by 1, 3 and 3 percentage points in 2002, 2003 and 2004 to levels of 6%, 0% and 6% respectively.

The offshore markets continue to represent a good way for the company to diversify its product line. Although the markets are still developing and are not as strong as the US market, offshore markets are not subject to many of the risks of the US market. Further, the coastal sawmills are set up well for offshore shipments. The company has made strides in associations with industry and government agencies to develop and strengthen those markets including China and Japan. The company has also worked hard at developing new markets in the UK and Europe,

achieving strong growth over the last couple years in those markets. Reaching a balance between these markets is a key success factor in achieving consistent earnings.

5 RECOMMENDATIONS

The following is a list of recommendations to address the issues discussed. Each of the recommendations are discussed and rationalized. A discussion of overall fit and strategic direction is also found in the final section of this analysis.

5.1 Manufacturing Investments

The company must make significant investments in its older coastal sawmills to improve efficiencies and lower costs. Investments must be targeted towards lowering costs by improving conversion efficiencies, increasing output and lowering labour inputs. The company must increase its investment in plant and equipment to amounts greater than it has historically, and the goal of these investments must be to move the facilities to the low end of the industry cost curve.

A good example of the investment targeted is that of the recently conducted Queensboro sawmill upgrade. Fundamentally, the investment will increase mill capacity from 80 million board feet to 180 million board feet, lowering costs through increased capacity. The mill can also consume a lower quality, smaller log than it used to, enabling the woodlands operations to send more wood from its own sources to the mill. The mill has also improved its flexibility, as it can now saw hemlock, balsam, spruce and cedar logs for many different markets and customers. The equipment in the mill adjusts very quickly between cuts for different customers, which keeps downtime minimal. This increased flexibility will help protect the mill against market volatility.

Coastal sawmills that can be targeted for major upgrade include Acorn, Hammond Cedar and McKenzie Seizai. The Acorn was rebuilt in 1989 and last upgraded in 2001. This mill could benefit from investments that increase the mills flexibility to reduce dependency on the

Japan market. Currently it produces whitewood squares for the Japanese market very well, but as such its profitability is tied closely to the health of that market. When that market is poor, the mill has difficulty producing lumber for alternate markets because its production lines are relatively inflexible. This constraint can be rectified with a major capital investment rebuilding the production line to one that has the ability to produce lumber for a variety of offshore and North American markets.

Hammond Cedar has undergone investments in dry kiln capacity in 1998 and 2001 and a productivity investment in 2002. Major investment that significantly reduces cost and improves lumber recovery is needed to keep the mill competitive in its market. Cedar products are under stress from factors that increase costs outside of the production process including a strong Canadian dollar and costly US tariffs. Cedar products are also facing strong competition from substitute products. The company should handle these competitive threats by rebuilding the facility so it becomes more efficient through lower costs, higher capacity, higher recovery and higher value extraction. Becoming more cost efficient and increasing the customer value proposition is an effective way to defend market share against competition from substitute products.

MacKenzie Seizai is an older mill that utilizes older technology to produce high value, appearance grade products. The mill could use major investment that would lower costs through improved efficiency, reduced labour and increased capacity. The mill is one of the last mills on the coast that can handle large logs and has established a business around producing lumber for Interfor customers and by sawing logs for other forest products companies. The mill always has a large order file with internal and external runs in the queue. Improving mill capacity would allow it to take on more work thereby reducing fixed costs and increasing revenues. As it is an old mill, a lot of labour is used in the production process; upgrading technology would allow the company to reduce the costly labour component. Also, running older equipment carries with it increased

maintenance and frequent periods of downtime to repair breakdowns; upgrading the equipment will improve mill reliability. Use of new technology would also reduce the setup time between production runs. As a custom cut mill, mill workers manually adjust the equipment for each specific lumber specifications required by each different customer, a timely and costly process. Upgrading technology can reduce many of these inefficiencies.

5.2 Debt Management

The company has the financial wherewithal to make substantial investments in capital improvements in its manufacturing facilities. Strong cash flow from operations has been typically used to make additions to plant and equipment, additions to logging roads and repayment of debt. At year-end 2004, the company had \$74 million in long-term debt, the balance of which was used to finance the purchase of Crown Pacific Limited.⁶⁸ Based on past management behaviour, it is likely that cash flows in 2005 will be used to repay this debt and to fund normal capital expenditures.

An alternate strategy would be to increase investments in plant and equipment financed with operational cash flows and hold the debt level at current levels for a couple of years. In 2005, the company has \$6 million planned in new investments in plant and equipment, in addition to \$14 million required to finish the Queensboro rebuild.⁶⁹ Investment of \$6 million is not sufficient to reduce costs to the position where the mills are cost competitive. Larger capital investments are needed to improve production efficiencies and lower costs, which are key success factors in the industry. Without major investment, the coastal mills will continue to operate with high costs and low margins. Improving mill efficiencies will go a long way towards creating a fit with the higher than average fibre costs on the coast, costs which arguably must be reduced, but ones that are nonetheless inherently high. Strategically, if the mills can extract more value from the fibre through improved efficiencies, the business will be sustainable.

5.3 Labour

Progress has been made to reduce the high labour costs in BC operations. A new labour agreement implemented in 2004 moved along the necessary path to reduce costs. Strategic diversification into different producing regions serves to reduce labour's power over the company. Increasing the investment in plant and equipment in Coastal regions would be a good way to further minimize the negotiating power of labour. Use of new technology reduces the skill requirement of labourers, as newer technology computerizes the important, routine, value added decisions. Lowering the skilled labour requirement from the production line will lower the labour cost. This will better achieve a fit with a low cost strategy.

Currently, the company uses the incentive of capital investment in plant and equipment to leverage power over labour, enticing them with the threat of mill closure opposed to continuing operations if labour remains high cost and inflexible. An alternate strategy is to use the investments to reduce jobs. Capital improvements will increase overall productivity and reduce expensive labour costs.

5.4 Logging Costs

The company is making good strides towards reducing logging costs by restructuring operations towards full use of logging contractors and towards a consolidation of harvesting contractors themselves. Key to this arrangement is providing contractors with longer range logging commitments. Providing this commitment will allow contractors to reduce overheads and make investments in new harvesting equipment. New equipment in itself leads to higher efficiencies and higher quality output, both valuable to the company, without requiring direct investment from the company itself.

A benefit of providing contractors with a steady state of operations is that it provides the opportunity to have the logging contractors build up road construction capacity, a task generally

completed by other contractors. This would provide efficiency gains in contract supervision, road construction quality, and would provide the opportunity to download the capital cost of construction to the contractor. The company has an accounting policy of capitalizing all road costs, amortizing them later against the timber developed by the road itself. Annual road capitalization has averaged \$24 million over the last five years.⁷⁰ Downloading the cost of roads to full phase contractors would free up capital for other uses such as sawmill investments. Where logging contractors lack the capacity to build roads, or during the period of transition from one model to the next, the company should change the road spending policy so road costs become expense items during the year of construction. Downloading road costs could be structured such that the cost is included in the harvesting rate paid at the time of harvest.

5.5 Coastal Supply Chain Management

The company can strengthen the relationship between the woodlands business and the sawmill business on the Coast of BC. The company must establish a business model that works towards treating the woodlands as a true supply centre without losing the positive attributes of a profit oriented centre. Currently, a driving motivation of the woodlands is to maximize pro forma operational margins opposed to cost minimization and supply consistency. The company must turn its attention to maximizing internal supply of timber at minimum cost. Under the current model, the woodlands may extract high value, high cost timber from its operating areas irrespective of whether or not the company mills consume the timber. This behaviour keeps cash flows moving for the company, but forgoes the opportunity to gain value from logging high quality internal logs. Maximizing internal supply increases the company's power over external suppliers, giving the company the ability to better negotiate price and quality of those sources.

The woodlands must continue measuring harvesting financial performance as a profit-oriented business to ensure that value is not lost by managing internal supply. The company has

gone through a period where external sources have become cheaper than internal sources, which inherently makes internal sources more costly as fixed costs get spread over less timber.

Reversing the trend requires a commitment on behalf of the woodlands to lower fibre costs and the mills to commit to purchasing more volume from internal sources. Much effort has been directed towards re-organizing logging contractors and reducing company logging operations. Conducting operations with fewer contractors that harvest more timber throughout the year will lower the company's harvesting costs, as those contractor should be able to work for lower costs as harvesting inconsistent, small volumes increases costs.

The company must also be cognisant of the way it prices timber for internal pro forma measurements. Currently, internal log prices are reflective of external log markets. Increasing internal supply reduces dependency on external sources, resulting in a reduction in supplier power, lowering open market log prices. A benefit of this is the opportunity to supplement internal supply with low cost external supply. Balancing internal and external sources allows the company to favour the lowest cost fibre and also keeps the pressure on internal sources to have low costs and remain efficient. A difficulty with this is it allows external markets to overly influence internal pro forma valuations, and this may result in the exclusion of internal supply, increasing demand for external sources and increasing pricing. To avoid this, the woodlands must measure fiscal performance with internal log prices based on the mills ability to pay opposed to the current open market price. An ideal situation would be to produce just enough internal supply allowing the log buyers to be selective with external sources.

The company must consider arranging more timber supply further up the supply chain by engaging more extensively in the activities of open market, government timber sales. The woodlands has a natural fit and ability to secure fibre from these sales by working with local operators to arrange purchases of logs and to arrange logging operations in coordination with its own operations and using its own infrastructure. In doing so, the company will gain control over

the processing of that timber, increasing downstream value to the sawmills and providing necessary supply. This will also work to further reduce dependency on external booms available for sale in the market, further increasing company power over suppliers.

Acquiring manufacturing facilities that better match potential log supply sources will strengthen the value of integration. Specifically, the company should consider expanding into manufacturing facilities that utilize second growth Douglas fir and cypress logs. The company sits with a large tenure of second growth Douglas fir stands. These stands are attractive to the logging group because they have low operating costs and high sales values resulting in positive operational positive margins. The weakness is that the company sawmills are not able to add as much value to high quality fir sawlogs as plywood manufacturers can. The result is the company sells this timber externally, losing the value of integration. Purchasing a plywood mill that utilizes these logs would be a good fit for the company, as its lower internal log costs would give it a cost advantage over other producers. Acquisition is recommended, as it would be the quickest way to gain the skills needed to run in the plywood segment and would provide it with immediate market share.

Similarly, the company has a large supply of cypress logs in its tenure holding that are typically high margin. Cypress is a species that grows along with old growth hemlock stands making avoiding logging the species difficult. Acquiring a cypress sawmill is a good fit for this reason, but also because some synergies can be gained. Because cypress lumber is sold almost exclusively in Japan, it would easily fit into the company's distribution channel. The company already has an extensive distribution channel in Japan and adding cypress to the product line would allow for overheads to be removed from the segment. The company would need to acquire a cypress mill and its people as the skills needed to saw cypress are very specialized as the cypress market is small and custom cut oriented.

5.6 Marketing

The company must move towards the creation of a few, core family brands. Currently, the company attempts to make low investments in marketing, promotion and advertising while maintaining many brands in many markets. This results in cost inefficiency and limited market awareness. Repositioning all products under a fewer number of brands will consolidate brand equity under those names, resulting in more efficient investing and allowing all product lines to gain from all advertising and promotion activities. Operating under fewer brands also allows new product lines resulting from acquisitions to gain immediately from existing brand equity, a good fit with a growing company such as Interfor. For example, should the company move into plywood products, the brand equity built up in the family name would provide immediate product reputation and sales.

Marketing all products under fewer brands will also provide the company with the additional benefit of gaining power over labour. As the company grows its production capacity, it has begun to acquire facilities that are able to produce similar product lines in different producing regions. Common brands can be used to mitigate labour power as disruptions in one facility can be countered by increased production from alternate facilities that share the same brands.

Use of fewer brands also sets the foundation for an option to increase promotional activities in the future. Given the softwood lumber market is growing slowly, one way to grow market share is to differentiate the products from the competition through advertising and promotion. This would be a reasonable strategy if the company first gained a competitive advantage in costs, and then wished to increase market share by moving into competitors markets. Further, given the industry distribution chain is diverse with many distributors, wholesalers and end users involved, family branding is also a good way to establish a solid product group reputation that makes it easier to move the products through the chain. Recognizable products are

easier to move than unrecognized products; an attribute that also will help protect sales during weak market cycles.

5.7 Market Diversification

The company is growing on a strategy towards product and market diversification with the goal of reducing revenue dependence on any one market. Recently, there has been a large expansion effort towards softwood lumber production destined for the US dimension market. The company needs to ensure it doesn't become overweight in the sector as it is very competitive and there are externalities that will continue to make it a difficult market. The ongoing softwood lumber duties will persist until a long-term mutually agreed upon arrangement is struck between the two countries. Until then, Canadian producer costs will remain artificially high. The strengthening Canadian dollar will persist until the US dollar reverses its weakness, something that may not occur in the short term as the twin deficits continue in the US. And the competition for dimension lumber in the market is intense. There are many low cost producers that are sending lumber to the market; a trend that will continue as lumber supply will continue to outpace demand over the foreseeable future.

Avoidance of this market is not recommended; merely a conscious effort to avoid over dependence is required. Now that the company has a good presence in the US, focus should be placed on aggressively developing new offshore markets that are accessible with the company's unique and flexible distribution channel. Further, all capital investments in sawmill facilities should be made with market flexibility in mind; that is, a mill that is not dependant on a single market will be far more successful than one that is dependant on a single market. The company must learn from its prior overdependence on the Japan. When that market collapsed, Interfor faced many years of losses and difficult restructuring.

A parallel movement towards product and market diversification and a reduced number of brands requires markets grouped under the same brands to be highly consistent. The company must ensure it matches up brands with markets consistently, while resisting the desire to treat each region as a unique market. For example, perhaps the company should have three brands, one for all Asian whitewood markets, one for North American cedar markets, and one for North American structural dimension markets. Any product and market growth would likely fit into one of these categories, allowing easy transfer of brand equity onto the new products.

5.8 Summary Remarks

If the company implements the recommendations, it will move towards better overall fit with a low cost strategy and it should lead to better optimization of the entire system. Achieving Porter's second and third order fits are possible as individual units feed off the strengths of other units. Major capital investment in sawmills will create efficient low cost lumber that is competitive in the market place. Consistent and growing sales volumes will result. The woodlands group will work steadily throughout the year, facilitating lower costs operations and downloading of capital costs. This results in cheaper logs for the sawmills, reinforcing the low cost position, protecting sales and facilitating growth in market share. Increased margins and higher cash flows will result, allowing continued investment in technology improvements and acquisitions that diversify product lines and geographic production capacity. Higher profitability will allow for higher investments in promotion and advertising that reinforce sales, expanding company market share and fending off competitors and substitute products. The company as a whole becomes stronger than any of its parts alone, and higher, more consistent earnings will result.

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