

SPENDING THE INHERITANCE:

Undifferentiated Production and the

Competitive Dynamics of the Post-War Forest Industry:

The Case of British Columbia Forest Products and MacMillan Bloedel

1945 - 1979

by

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Abstract

The continued production of undifferentiated products in the B.C. forest industry has fascinated and divided provincial historians. The causes of this orientation of production are varied and complex. The provincial government and British Columbia's forest companies have each played a role in determining the orientation of production. The undifferentiated end products of these firms were the consequence of conscious government and business decisions made in British Columbia in the post-war period (1945 - 1979).

B.C. forest resources were (and remain) owned and administrated by the government. Private access to these assets was (and is) determined by provincial statute. The government was instrumental in orienting the undifferentiated production undertaken by MacMillan Bloedel and B.C.F.P. in two fashions: by systematically subtracting value from the resource in order to attract capital to the industry; and, by adopting a variety of other policy initiatives that promoted the establishment of large-scale enterprises.

Professor Michael E. Porter, in his book, The Competitive Advantage of Nations, argues that a firm's end products are the result of its competitive advantages and disadvantages. The two firms examined in this essay possessed two competitive advantages that promoted undifferentiated production: a high degree of productive integration from supply through to marketing; and large-scale production. Competitive disadvantages can allow a firm's products to become less advanced over time, or can preclude the advance to more differentiated production.

Four competitive disadvantages prevented the development of differentiated products by Macmillan Bloedel and B.C.F.P. First, a superabundance of timber perpetuated undifferentiated production. With the continued supply of excellent quality timber protected by the government,

competitive supply pressures were eliminated, and the resource was not evaluated or utilized to its maximum potential. Second, the integration of downstream supply networks by M.B. and B.C.F.P. impoverished lower levels of the industry. While this provided cost advantages to the producers, it limited the number of suppliers. Third, managerial incompetence at MacMillan Bloedel, and a narrowness of focus at B.C.F.P., limited the productive opportunities of these two firms. Finally, the collaboration of the two firms in marketing their undifferentiated products also diminished competitive pressures needed to promote differentiated production. Thus, contrary to some previous analytic approaches, the production orientation of these two firms can be explained with an historical analysis of their competitive advantages and disadvantages in the post-war period.

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Chapter I

Introduction

Historical accounts of the B.C. forest industry have examined the perpetuation of undifferentiated production in the post-war period. An undifferentiated product is one that lacks any differentiating characteristic or benefit which would add value for buyers.¹ Undifferentiated products generally have a lower market value compared to differentiated products. Professor Michael E. Porter defines the process of product differentiation as follows: "Differentiation allows a firm to command a premium price, to sell more of its product at a given price, or to gain equivalent benefit such as greater buyer loyalty during cyclical or seasonal downturns."² According to Professor Porter, a product can be differentiated by a special feature that gives it superior quality; the degree of service associated with it; the technology employed in manufacturing it; the quality of inputs used in producing it; the manufacturing procedures used to produce, design, market, or deliver it; the quality of personnel associated with it; and the inter-relationships between the seller and the buyer that make it more attractive.³

Large-scale integrated forest companies operating in British Columbia in the post-war period did not manufacture many differentiated products. With the exception of some specialty packaging and paper products, the large integrated forest product companies manufactured largely undifferentiated products, including lumber, plywood, wood products (residuals, shakes and shingles), newsprint, pulp, paper and corrugated paper products. Most of these products were subject to wide cyclical variations in demand and did not command special buyer loyalty during downturns in the business cycle. They possessed few of the differentiated qualities of value suggested by Porter. Without these

qualities, undifferentiated forest product manufacturers depended on their ability to create relatively basic products as cost-effectively as possible. They depended on preferential access to superb resources at low-cost and sought to increase economies of scale by integrating productive units. Few resources were devoted to the research and development of new, differentiated products. The forest companies concentrated instead on process refinements and a reduction of overhead costs.

Why did large-scale forest product firms not advance to more differentiated production in the post-war period despite the obvious opportunities to do so presented by the potential of the resources? The following thesis is concerned with this question, and offers an explanation based upon the competitiveness paradigm presented in Michael E. Porter's book, The Competitive Advantage of Nations. It seeks to offer a new, holistic approach to this historic and present-day problem.

The most comprehensive analysis of the post-war forest industry is provided in Professor Patricia Marchak's book, Green Gold: The Forest Industry in British Columbia, which is highly critical of the productive orientation of forest companies operating in B.C. While Professor Marchak provides an interesting thesis concerning the industry's lack of advancement to more differentiated production, it does not offer a micro-economic analysis of the dynamics of the firms themselves, or of how these dynamics precluded an advancement to differentiated production.

Professor Marchak argues that undifferentiated production is a natural consequence of exploitative capitalist dynamics between central and peripheral regions.⁴ According to Marchak, B.C. was (and remains) a peripheral region that supplies raw materials for manufacturing enterprises elsewhere, principally in the United States. In Marchak's view, large productive enterprises in the U.S. used the peripheries as supplier networks for their own differentiated production

in the post-war period. The peripheral regions gradually became denuded and impoverished over time, despite the fact that a select few derived a reasonably high standard of living from the industry.⁵

Derived from the 'staples' theory of Canadian history (Canadian economic development being a consequence of raw material exploitation), Marchak's ideas depend on the assumptions of comparative advantage trade theory. Post-war undifferentiated production was a consequence of demand, and the orientation of production was determined by market needs. B.C. had an inherent advantage in the quality of its resources, and manufacturers elsewhere demanded them as inputs essential to their value-added products. B.C.-based forest product companies were thus formed to take advantage of these external trade demands. The production of undifferentiated products was the consequence of inequalities in the trade patterns between wealthy and poor countries (or between a value-added producer and a resource supplier).

Marchak deemed a dynamic analysis of the forest businesses operating in B.C. to be of minor importance in determining their production orientation. The businesses were facilitating productive processes based elsewhere. Their internal dynamics were irrelevant due to their entrapment in macro-economic forces that were beyond their control. The forest businesses in B.C. had fewer and fewer options due to declining resource bases from which to draw upon, as wealth was gradually stripped from the peripheries towards the manufacturing centres. The forest company's business policies were strictly oriented towards short-term consumption and not towards longer-term value-added production. Thus, product decisions were the consequence of the natural evolution of the laws of comparative advantage, and had very little to do with the micro-economic decisions made within forest companies themselves.

This analysis is deficient in several respects, however. First, it is too deterministic. It is true that productive decisions are highly influenced

by market forces, but it is not correct to assert that such forces predetermine them. Marchak's interpretation offers no explanation for the production decisions made within these two firms. Market forces in and of themselves do not explain adequately the historical evolution of the two firms or their products in the post-war period. Second, it is not accurate to argue that wealth generated in B.C. was syphoned off to the peripheries. MacMillan Bloedel was owned by residents of B.C., and most of the wealth created in the province remained there. B.C.F.P. was owned by Toronto-based interests, but Ontario was not a central market for the firm. Thus, one would be hard pressed to argue that resources were being used in the manufacture of more value-added production in Ontario. Also, much of the wealth generated by B.C.F.P. was re-invested in B.C. Third, there is an economic deficiency in the analysis. It assumes that markets create products. The U.S.-based manufacturers, in short, needed raw materials and sought suppliers to fill their needs. Wealth was thus created through the fulfillment of a pre-existing market need. However, it is more likely that products create markets and not the other way around. The logging industry in B.C. predated the development of large-scale industrial enterprises at the manufacturing centre. Wood products existed before they were used as inputs in value-added production in the U.S. It is products (both differentiated and undifferentiated) that create wealth and markets, and not the markets that create products. Thus, production decisions are much more important as a determinant of end product than this argument accounts for.

From a Canadian historical perspective the argument also tends to be a bit presumptive. It assumes that Canadian business history is nothing more than an adjunct of industrial development in the United States. Business decisions merely reflected the need to satisfy U.S. market demand for wood products. It denies the history of the two firms, and the history of their localized dynamics. Companies derive much of their success as a consequence of

their exploitation of localized competitive advantages, which are best explained within a micro-economic framework, and not in terms of an elaborate trade theory. Business history is best written from the production centre out, not from the marketplace in. A more localized production orientation is needed to fully explain why an advance to more differentiated production was not made by these two firms.

In his book, The Competitive Advantage of Nations, Professor Michael E. Porter, argues that a firm's end products are a consequence of its competitive dynamics. Within these competitive dynamics there are competitive and uncompetitive characteristics. Uncompetitive characteristics can destroy competitive advantages or inhibit their growth. They can also determine the orientation of production. Porter argues that the end product is a direct reflection of the level of competitiveness exhibited in four key areas of business activity: managerial competence; market competitiveness; the competitiveness of suppliers; and the quality of production inputs (labour, raw resources, scientific research, and educational infrastructure).⁶ All four factors must be competitive if the firm is to achieve the most sophisticated form of product differentiation.⁷

The model is a good one in that it argues plausibly that differentiated production results from symbiotic pressures from these four aspects of the business. Competition is a driving force for advancement to differentiated production. As the firms encounter greater measures of competition, they put together more specialized competitive advantages necessary to produce the most advanced end products. Porter is primarily concerned with the erosion of competitive advantages in developed nations and in firms that specialize in the production of mature, sophisticated products. But the paradigm, because of its ability to identify the competitive disadvantages that inhibit product development, may also be used to demonstrate why firms do not progress to higher

value, differentiated products. Porter's model is relevant for British Columbia Forest Products and Macmillan Bloedel because both firms had opportunities to progress to more advanced forms of production. The inherent value in B.C.'s wood resources offered opportunities for the manufacture of rayon products, disposable products (such as babies diapers), synthetic fuels, cosmetics, medicines, and composite materials. B.C.'s wood resources could also have been used as inputs for secondary manufactures such as furnishings, airframes, and prefabricated constructs, to name a few. These opportunities existed, but B.C.F.P. and MacMillan Bloedel were prevented from advancing to them by their competitive disadvantages, which are exposed through the application of Porter's model.

Government is peripheral to Porter's dynamic. According to Porter, government should adopt policies which encourage the development of highly sophisticated industries.⁸ Once these industries have become self-supporting, the government should not artificially create competitive advantages for them.⁹ But, in B.C., the government played an important role in orienting the form of undifferentiated production undertaken by the two firms examined in this study. It accomplished this in two fashions: by adopting policies that systematically subtracted value from the timber resources in order to attract capital to the industry, and by reinforcing these policies with a number of other initiatives that were designed to foster the growth of large-scale, undifferentiated forest product manufacturers in British Columbia.

The forestry sector constituted the most important segment of the economy and generated government interest and involvement in attempting to derive value from the resources. Yet, paradoxically, little government and business effort was made towards the development of more differentiated wood products. Few secondary manufacturing competitors existed to challenge for access to the forest resources. The potential of new product development was thus defined exclusively by firms that produced undifferentiated resource products. Yet,

despite the opportunity to advance to differentiated production, no forest product firms operating in B.C. in the post-war period chose to exercise this option. Firms in B.C. were able to achieve large-scale global market competitiveness for undifferentiated products. They were integrated fully into North American and other world markets by successfully controlling their manufacturing and distribution costs. They were familiar with their markets and successful in exploiting market opportunities. The forest product companies benefitted from B.C.'s 'open' economy, with its unrestricted trade in goods, services and people across provincial boundaries. The forestry firms faced few tariffs on their products and were able to achieve economies of scale by exporting their products to outside markets. They achieved the large economy of scale production necessary to generate the money needed for significant research into the development of new products. The firms also had access to a large market that would defray the costs of research and development. Yet, despite all of these advantages, which also included access to some of the most desirable timber resources on the North American continent, the firms (including the two studied here) made no effort to move to more sophisticated wood products in the post-war period. The historical question remains: why?

In order to answer this question, the two largest undifferentiated forest products firms operating in B.C. in the post-war period, British Columbia Forest Products and MacMillan Bloedel, will be analyzed. These two firms were best placed to undertake the necessary risks associated with the development of new products (in that they could absorb costs and possible losses associated with the development, production and distribution of new products). They were the most successful at establishing economies of scale in the manufacture of undifferentiated forest products. They had access to the best timberlands, and possessed sophisticated management, production and marketing knowledge. In post-war British Columbia MacMillan Bloedel was the forest products industry leader

with world-wide marketing connections, and as such, it cannot be ignored in any historical analysis. Both B.C.F.P. and M.B. had world-scale production units and collaborated in penetrating the continental marketplace. Both firms were Canadian-owned and determined their production priorities without having to answer to a foreign parent company. If any firms were in a position to move to more differentiated production in the post-war period, it was these two. Also, as the largest firms, it is possible to accumulate the necessary historical data to draw conclusions on their productive dynamics. Both primary and secondary historical sources can be examined within Porter's demanding competitiveness paradigm. These two firms were the most important forestry companies operating in B.C. in the post-war period, and among the largest operating in any sector of the provincial economy. They best reflected the industrial structure of the forestry sector: both in terms of its strengths and of its limitations.

British Columbia Forest Products and MacMillan Bloedel moved throughout the post-war period to capitalize on government policy initiatives by establishing some competitive advantages of their own. The two firms were able to achieve the production of undifferentiated end products by doing two things: by integrating their supply, production and distribution functions, and by establishing large-scale productive enterprises.

This production orientation led to some competitive disadvantages, however, which prevented them from advancing to differentiated production. First, timber superabundance led to lethargic business practices and an over-dependence on natural resources for business success. Second, the integration of supplier networks further devalued the resource and served to eliminate some competitive pressures on the firm. Third, the two firms suffered from managerial difficulties: incompetence at MacMillan Bloedel and a narrowness of focus at B.C.F.P. Fourth, collaborative marketing arrangements also served to diminish competitive pressures. These four factors combined to perpetuate

undifferentiated production at the two firms. By applying Porter's competitive dynamic, which outlines the competitive advantages needed to progress to differentiated production, we are able to identify the four central factors that inhibited this process in the two principal forest industry firms of British Columbia after the Second World War.

Thus, the thesis will postulate the following: the government of British Columbia adopted policies that fostered undifferentiated production in the post-war period. B.C.F.P. and MacMillan Bloedel capitalized on these policies by exploiting two competitive advantages associated with undifferentiated production: the integration of production, and the possibility of large economies of scale. However, by applying Professor Porter's dynamic we are able to identify four principal competitive disadvantages: managerial incompetence and narrowness of focus; marketing collaboration; supplier integration, and, timber superabundance. These disadvantages destroyed the dynamic process of symbiotic competition and precluded an advance to differentiated production by B.C.F.P. and M.B. after the Second World War.

Chapter II

The B.C. Government and the Orientation of Production

The government of British Columbia assumed a series of important forest sector responsibilities in the post-war period. As owner, administrator and benefactor of the forest resources, the government had an important role in creating conditions that oriented the business strategies of forest companies operating in B.C. The government's administration of access to the resource had an influence on the competitiveness of the two firms examined here. Government sensitivity to business competitiveness contributed to the evolution of forest policies that were designed to subtract value from the timber resource in order to attract capital investment to the province. Secondly, these policies were also designed to promote the development of large economy of scale forest companies.

The question of economically exploiting the resources was never in doubt. The B.C. government sought through its policies to codify its ownership of the forests and to determine cultivation patterns; to secure its share of the revenues; and to promote the development of private enterprises which could exploit the full economic potential of the forest. The evolution of more sophisticated forestry practices including resource management, replenishment, and more effective use of uneconomic stands only complemented the government's commitment to full use of these natural resources for the generation of wealth.

But the government's commitment to the realization of these objectives produced a series of problems. It had to ensure that companies transferred economic rent to the public treasury in return for the privilege of cultivating public resources. But this transfer did not (and was not designed to) compromise the industry's profitability. The government also had an interest in ensuring

that the most sophisticated value-added products were manufactured from the forest. By contrast, business was interested in maximizing short-term profits. The government also had to examine the possible long-term alternate uses for the forest resources, such as public parks, recreation areas, wildlife preserves and so forth.

The wealth generated by British Columbia's forest sector has been, and remains, considerable. By any measure, the forest resources of British Columbia have been rich with economic potential. Fully 134 million of the 234 million acre provincial land base is comprised of merchantable forest resources.¹⁰ The magnitude of these resources was both a blessing and a curse. It was a blessing in that it offered the prospect of sustaining many large-scale wood products enterprises. Throughout the post-war period (1945 - 1979) the provincial economy was relatively small, so the prosperity of these enterprises was dependent on access costs, manufacturing costs, transportation costs, exchange duties, and the desirability of their products in world markets. The open labour and investment markets also ensured that a positive climate existed for the development of forest product firms in B.C. But, the superabundance of natural resources also engendered an over-reliance on these products for provincial prosperity. The firms and the government became dependent to an unhealthy degree on the availability of cheap and plentiful timber. Even two years after the period examined in detail (1945-1979), the forest industry still contributed disproportionately to the B.C. economy: "In 1981, the industry directly accounted for 6.7% of provincial employment, 11.7% of the expenditures on capital and repairs, 53% of the province's exports through Canadian ports, and 42% of provincial manufacturing shipments."¹¹ This dependence has drawn criticism from a variety of sources.

Patricia Marchak has largely attributed blame for this resource dependence to the government of B.C. In her sociological analysis of the forest

industry, Green Gold: The Forest Industry in British Columbia, Marchak argues that B.C.'s unbalanced economic structure is a consequence of the forest companies providing relatively unsophisticated products to more developed markets abroad. Professor Marchak argues that manufacturing centres (more developed economies), especially the United States, exploited B.C.'s resource wealth in the post-war period by purchasing raw materials (especially timber and pulp) for the manufacture of more differentiated products outside of the province. Few sophisticated forms of production took place in B.C. because these developments would have been considered potential impediments to the continued supply of raw materials to the centre. In Marchak's view, the government of B.C. has been a willing partner in this business.¹² Eager for resource rents and short-sighted in its resource policies, the government has fostered the development of businesses that facilitated differentiated forms of production in the United States.¹³ Thus, B.C. forest companies were unwilling or unable to move to more advanced production due to their subordination to U.S. industrial needs.

While Professor Marchak offers an interesting hypothesis concerning the relationship between the government, undervalued resources, and the absence of more sophisticated manufacturers in B.C., there are important deficiencies in her analysis. It presumes that the movement to more differentiated forms of manufacture is dependent on government policy initiatives. The absence of government-led diversification will thus result in the creation of a resource-oriented business dynamic. Based on historical evidence it is demonstrably verifiable to argue that the B.C. government pursued policies designed to promote the development of large-scale economic enterprises based upon the subtraction of value from the resource. It is also true that these policies helped to promote the large-scale manufacture of undifferentiated products. What is less clear is the direct connection between government policy and differentiated production. Is it sufficient to argue that an absence of government policy

initiatives designed to promote differentiated production has resulted in an absence of differentiated production? Marchak's argument assumes that the government has been entirely responsible for the orientation of production in the post-war period. Is it reasonable to argue that government policy alone could have orchestrated sophisticated production, fostered appropriate managerial strategies, promoted the establishment of competitive suppliers, captured market share, and ensured a continuous supply of quality inputs of production?

Professor Porter attaches significant importance to the conscious decisions of individual businessmen as a determinant of their type of production. In order to succeed, the businessmen must realise that the prosperity and productivity of the businesses will be determined by their commitment to excellence and to the upgrading of their product lines.¹⁴ Businesses must autonomously make the decisions necessary to advance to the most sophisticated differentiated production possible. For Porter, the government's role should be supportive of business autonomy, rather than as an administrator of their affairs or as a shelter for their failures. Porter is critical of governments that artificially create competitive advantages.¹⁵ Hence, he would be sceptical of the government of B.C. exercising exclusive control over the allocation of natural resources. The government, in this case, has to evaluate market pressures and ensure that it preserves the competitive advantages for the firms. Thus, the government's degree of participation in the economic affairs of the firms is important in that it orients business decisions. For Porter, the prevalence of government intervention is usually an indication of unhealthy and unsustainable enterprises in the long-term. Porter argues that the most advanced form of differentiated production is the result of the symbolic inter-action of competitive factor inputs of production, managerial excellence, vibrant supplier industries, and a dynamic and demanding marketplace for the product.¹⁶ Governments alone cannot possibly create all of these elements, and if they try

to do so by merely subtracting value from inputs of production, the businesses may become dependent on this competitive advantage for much of their success. This is precisely what happened in the forest sector in B.C. The sheer abundance of forest resources coupled with the government of B.C.'s timber access policies forestalled competitive pressures to upgrade to more differentiated production. Subtracting value from the timber resources was the key component of this business orientation. Prior to investigating how this was accomplished, a brief historical analysis of the B.C. government's timber access policies is required.

Forest Tenure Policy - Terms of Access

The policy of granting timber access to forest companies without conferring title on the land was instituted with the passage of the 1865 Land Ordinance Act. The colonial government, and then the provincial government, instituted three types of early tenure arrangements between 1865 and 1907. These were the Timber Leases, the Timber License and Pulp Licenses. All three of these categories were grouped together in the post-war period and are now referred to as Old Temporary Tenures. The original Timber Leases did not restrict the size of the stand, duration of the holdings, or provide for charges to the lessee. In 1888, the provincial government initiated a new Timber Lease which exacted a royalty fee of \$0.50 per thousand board feet and a rent of \$0.10 an acre on condition that the lessee construct and maintain a sawmill of a specified productive capacity.¹⁷ In 1892, the government devised a competitive bidding process for the Timber Leases, the highest bidder to be the one accepted. At the same time, the government decreed that the Leases were to be extended for 21 year periods only, and, in 1901, all Leases were brought under the 21 year provision. To accommodate independent loggers, the Timber License was instituted in 1888. The size of the area of the Timber License was limited to 1,000 acres. The rights of these Timber Licenses were transferable to others and were

renewable for periods varying from as little as 1 year to 21 years.¹⁸ The final Old Temporary Tenure was the Pulp Lease, introduced for pulp mills in 1901. The royalty for pulpwood was \$0.25 per cord of pulpwood, and this Pulp Lease was discontinued after 1903, but, by then, 354,000 acres had been alienated for a renewable period of 21 years.¹⁹ Thirty-three of these Pulp Leases were still in operation in 1976.

In the 19th century the government also provided land grants to private sector companies that were building railways. These lands could then be liberally exploited for their timber resources. One of the most prominent was the E.& N. Railway grant, which was measured in the 1910 Fulton Report at 375,000 acres with an estimated timber stand of 5,380,000,000 cunits.²⁰ A few of these initial railway grants were still legally binding in the late 1970's, and if the lands were "acquired prior to April 7, 1887 and Crown granted before March 13, 1906, the timber was exempt from royalty and logs were exportable without permit".²¹ (In the post-war period, the government increasingly encouraged sustainable yield forestry on these lands by granting adjacent lands if the companies included their old grants in newer Tree Farm Licenses). The old grants (of which only a very few now exist in the coastal region) were highly prized by companies due to their liberal access terms and low rent payments. In 1883-1884 the provincial government also granted the federal government land to build the transcontinental railway on the mainland. The federal government then granted timber rights for royalties and stipulated that the lessee construct and operate a sawmill. These lands were classified as Timber Berths. The provincial government honoured the conditions of these Timber Berths after they were transferred to their jurisdiction in 1930.

The increasing complexity of timber access arrangements forced the government to adopt more sophisticated management techniques. The government accepted the recommendations of the 1910 Fulton Report that called for the

establishment of a forest service, and one was established in 1912 under the Forest Act.²² The province's forest resources were to be cruised and classified by the forest service, and rates and rents were to be based on professional assessment. Lands were also re-classified for distribution under a new form of license: the Timber Sale License. The T.S.L. was developed in order to more accurately gauge the economic potential of the stands. Capital expenditures needed sophisticated feasibility studies which were provided by B.C. Forest Service data. Yet, despite the improvement in data accumulation and resource management, serious problems were in evidence by the late 1940's. The bulk of the timber in the province was being harvested under the Old Temporary Tenures, but these old arrangements were not designed for the long-term prosperity of the industry. Few conditions had been placed on the harvesting and reforestation of the resource. There was concern in government about the possibility of resource communities exhausting their resources due to the short-term orientation of forest policy.²³ Clearly, a more modern set of policies was needed to ensure B.C.'s economic prosperity in the post-war period.

In 1943, the Liberal/Conservative government of John Hart established a Royal Commission under the direction of the Honourable G. McG. Sloan to undertake a series of recommendations to reform forest policy. The end result was the adoption of an amendment to the Forest Act in 1947 of a sustained yield forest management policy in British Columbia: "He [Sloan] had concluded that the public interest required such a policy in order to gain maximum advantage from the province's forest resources, and to provide stability to the industry and communities which depended upon them. Forest land, he proposed, should be managed in perpetuity."²⁴ The Commissioner recommended the creation of two Sustained Yield Units which he termed as "Private Working Circles" and "Public Working Circles".²⁵ The "Private Working Circles" were subsequently named Forest Management Licenses, and then later renamed Tree Farm Licenses (T.F.L.'s).

"Public Working Circles" were renamed Public Sustained Yield Units.

The Tree Farm License was designed to entice private forest land holders of Old Temporary Tenures and Crown Grants to combine their land with newly apportioned lands into sustained yield forest management units.²⁶ Initially, in the late 1940's, the T.F.L. was granted for a 'perpetual' period (later revised to 21 years) under which the licensee held responsibility for the cultivation and management of the land as well as "...the option of bearing the full costs of growing timber, in return for which he would be charged only a fraction of the stumpage value."²⁷ Companies wishing to bid for T.F.L.'s made an application to the Forest Ministry and final discretion concerning the acceptability of the tendered bid was given to the Forest Minister. The government also sub-classified the land under the T.F.L. The land contributed by the lessee was classified as Schedule 'A' land, while the land that the government added was classified as Schedule 'B' land. Schedule 'A' land was given special property tax provisions under the Taxation Act. Schedule 'B' land was separately evaluated by the Forest Service for stumpage fees, while Schedule 'A' land was assessed according to the original provisions of the O.T.T. or Crown Grant. The measure was popular, and, by 1956, 43 T.F.L.'s had been granted, 16 of which had perpetual terms.²⁸

The licensee had to fulfil specific forest management obligations under the terms of the T.F.L. The license holder had to provide a five-year sustained yield forest plan which had to be approved by the Forest Service: "These plans covered operations on all tenures within the license, and included reforestation programs, inventory data, allowable cut calculations, and general development priorities for the areas covered."²⁹ It is important to note as well that the enterprises that derived financial benefit from the cultivation of the resources were primarily responsible for the qualitative assessment of the economic value of resources under their jurisdiction. They were also responsible for

implementing proper forestry practices only within the constraints of operating a profitable business enterprise. Critics argued that this constituted a blatant conflict of interest and an abrogation of government responsibility for the management of the province's resources.

In his second report commissioned in 1956, Judge Sloan proposed changes to the T.F.L. arrangements which were adopted by statute in 1958. All licensees were required from 1958 to pay full appraised stumpage but were compensated for their forestry costs.³⁰ The T.F.L.'s that were awarded ranged in size from 19,000 acres to 6.6 million acres³¹ and were clearly designed to ensure a continuous supply of wood to large-scale, integrated forestry complexes. The T.F.L.'s were affiliated with a large-scale production unit and could not be transferred or sold separately from the unit unless the company received the consent of the Forest Minister.³² Companies that failed to meet the T.F.L. provisions could have their license stripped.

In the 1950's the government also introduced a new license that would become the most prevalent means of allocating land without alienating title in British Columbia: the Public Working Circle (later renamed as the Public Sustained Yield Unit). Between 1950 and 1973 approximately 60% of B.C.'s forest land was allocated in this fashion. The P.S.Y.U. was a modified form of the old Timber Sale License. This new license could extend for a period of up to 30 years and was "...designed to provide licensees with sufficient continuity of timber supply to encourage them to construct costly road systems into remote areas."³³ According to Professor Peter Pearse, the government introduced the new P.S.Y.U. system for two reasons: to ensure that responsible levels of forestry management were introduced, and, to reduce the overall number of licenses being issued.³⁴

The purpose of these controls was to rationalize the government's licensing system and provide for greater administrative control. Initially,

those who held the P.S.Y.U.'s were designated 'quotas' of timber that they were entitled to cut. These quotas were assessed according to a combination of calculations based on the last 3 years of cuts; the permitted annual cut; the Forest Services' calculation of an 'acceptable cut; and the size of the production unit.³⁵ More important than this, however, was the new long-term orientation of the bidding procedures for obtaining P.S.Y.U.'s. Up to 1960 bidding procedures for new licenses were relatively open. Outside bidders were permitted to counter the bid of the license holder at an auction where oral bids were accepted.³⁶ In 1961 the practice of oral bids was scrapped in favour of a sealed bid process.³⁷ The holder of the license was entitled to make a sealed bid whereas other bidders made a more public bid. License holders were given the privilege of matching any competitive bid. The government made the prospect of an outside bidder securing the license even more remote in 1964, when it began to charge an application fee to new bidders. Professor Pearse in his Royal Commission Report argues that this non-refundable fee (\$0.50 cunit of harvestable wood) was a very successful means of discouraging competition for lands that were previously committed to established operators.³⁸

The large-scale expansion of the forest industry into the interior precipitated the development of a new series of access terms. The most prominent of these, the Pulpwood Harvesting Area Agreements (P.H.A.A.), eventually became part of the P.S.Y.U. system. The government had to reconcile P.H.A.A.'s with arrangements that had already been made for sawmills operating in the interior, however. The first P.H.A.A. was issued in 1962 for a pulp mill in the Prince George area, and, by 1967, three other licenses had been established for Kamloops, Quesnel and Prince George.³⁹ A few stipulations were associated with the P.H.A.A.: the license was for a period of 21 years and timber cuts had to remain within the authorized limit for the mill; the timber rates were fixed in the low 'pulpwood' class; the pulp mills had to purchase their chips from

sawmills in their area; and, the pulpwood mill owners were encouraged to practise close utilization standard forestry.⁴⁰

The close utilization standard was introduced in the 1960's to replace the intermediate utilization standard which merely obligated the licensee to remove all timber in their stand suitable for lumber production.⁴¹ The close utilization standard was implemented in response to two business trends: technology was improving the ability of mill owners to remove previously marginal timber at a profit;⁴² and the government wished to maximize rent and use timberland responsibly. To ensure the adoption of this standard, the government offered incentives for industry to upgrade its productive capacity. In 1966 the government also increased the lumber quotas by one third for pulp mills and sawmills that shifted to the new close utilization standard.⁴³ As the amount of timber harvested under close utilization standards grew, it became necessary to devise a new form of licensing system: Third Band Licenses.

The Third Band License was the result of increased investment in productive technology which outstripped quotas set under close utilization standards. Third Band Licenses were granted when mill owners could demonstrate that they 'needed' the timber. They had to operate their production units at a prescribed rate of "440 shifts per year for sawmills and 660 shifts per year for pulpwood and veneer plants;"⁴⁴ cut their allotments at 80% of close utilization standards; and procure their chips from sawmills operating in their Pulpwood Harvesting Area.⁴⁵ By 1975, "...they [Third Band Licenses] accounted for over half the harvest in some interior regions, while on the coast with its larger timber and larger 'quota' increases, their contribution was almost negligible."⁴⁶

The new P.S.Y.U. system and the close utilization standard transformed the licensing system. Owners of T.F.L.'s sought to capitalize on government subsidies designed to promote close utilization standards. As a result of the

adoption of new close utilization standards by T.F.L. holders, cutting rights in B.C. increased by up to 500% "⁴⁷ (between 1960-1974). The government also sought to phase out poorly planned aspects of the Timber Sale License by creating a new category of license: the Timber Sale Harvesting License (T.S.H.L.). The T.S.H.L. permitted the licensee to cut an annual rate of timber rather than all the timber in a specific area.⁴⁸ The timber allotment was reclassified as a management unit and cutting permits had to be issued for all 'chart areas' in the unit.⁴⁹ The new arrangements had advantages for mill owners: "The new tenures enabled licensees to consolidate operations previously scattered among several short-term Timber Sale Licenses in a Public Sustained Yield Unit and to plan their harvesting to meet mill requirements over a longer period."⁵⁰ The stumpage paid on T.S.H.L. lands was appraised by the Forest Service, and renewal of the license was a mere formality as the license was designed to ensure the long-term utilization of the stand by the large-scale mill owner. The T.S.H.L. became the most important form of timber access license in the P.S.Y.U. category with 60% of the P.S.Y.U. harvest and a total of 30% of the provincial cut by 1976."⁵¹

The government also initiated one other form of license in the post-war period: the Mill License. Only four of these licenses had been issued by 1976. Under the terms of the Mill License the licensee was obligated to construct and operate a mill.⁵² The license was for a period of 21 years but unlike other licenses there were no rights to any fixed stand of timber. The Forestry Minister offered only letter assurances that he would direct 'appropriate' resources to the mill. These licenses were first granted in 1969, the first being for a pulp mill in the East Kootenays after the Pulpwood Area Harvesting Agreement for the region was cancelled."⁵³

The British Columbia government's timber access policies clearly evolved in favour of large-scale enterprises in the post-war period. Large allocations

of timber for large-scale production, the gradual elimination of competitive bidding processes, and the introduction of more sophisticated forestry techniques (which only the large firms could afford) promoted economy of scale development. But, the most important consequence of government tenure access policies that MacMillan Bloedel and B.C.F.P. exploited in the post-war period was the systematic subtraction of value from the timber resource.

The Subtraction of Value: The Means of Orienting the Development of the Competitive Dynamic

At the end of the 1970's, a large-scale forest company operating in B.C. faced a wide variety of access costs. These costs included royalties, stumpage, forest fire costs, road building costs, and taxes on inputs, income and logging. Royalties were charged according to statute on Schedule A land tenures. Stumpage was charged on timber sales derived from harvesting licenses on all Schedule A & B lands⁵⁴ but was not charged to Timber Leases and Licenses, Pulp Licenses and Leases, and Dominion Timber Berths (or O.T.T.'s). Another form of rent was charged on O.T.T.'s: "from \$0.25 an acre for pulp licenses; \$0.50 per acre (Timber Licenses, Dominion Timber Berths, or timber sales other than pulp. Timber Sale Harvesting Licenses were assessed at \$0.04 per c.c.f, and Tree Farm Licenses (B) at \$6.40 per square mile".⁵⁵ Those firms that owned O.T.T.'s on lands acquired prior to April 7, 1877, paid the following costs: no royalties; forest fire protection \$0.12 per acre; and provincial property taxes of 1.1/2% on 'timberland', 3% if the land was classified as 'Wildland', or 1% assessment on Tree Farm land.⁵⁶ A logging tax of 15% was charged on logging profits in excess of \$10,000.00 and school taxes were also applied in conjunction with the assessment of the local board.⁵⁷ Lands that were acquired or granted between April 7, 1887 and March 2, 1914 paid all charges according to their statutes.⁵⁸ Forest companies also had to pay forest fire protection assessments

of 12%, logging taxes of 15% of values in excess of \$10,000.00, provincial taxes (as above), and applicable school taxes on these lands.⁵⁹

Although these taxes and rental fees were low for the relatively small amounts of timber that they applied to, by far the most important provincial government mechanism for devaluing the resource was the stumpage appraisal system. The process of stumpage appraisal, introduced in 1912, was and continues to be the most contentious issue surrounding the forestry business in B.C. For some, the monetary price of gaining access to B.C.'s forest resources has been too low, resulting in poor allocation of forest resources, higher than normal profits and wages for industry and workers, lower revenues for government, plant inefficiencies (i.e. larger economy of scale plants than the normal operation of the market mechanisms would have permitted), and wasteful forestry practices in general. For others, the stumpage system has fairly appraised the 'fair market value' of the timber: very closely approximating a free market mechanism bringing together willing buyers and willing sellers of the resource. In the eyes of industry, the evaluation of timber should have been (and was) assessed as follows: "Standing timber derives its commercial value from its convertibility into saleable products at a profit. The value of standing timber is the difference between the sales value of the marketable end products, and the cost of investment."⁶⁰ Aside from the philosophical difficulty of accepting industry's valuation of timber, critics have pointed out that there were structural deficiencies with a timber assessment system that accepted the industry's view of the value of the timber. The system was flawed in two key respects: by the increasingly small number of buyers and sellers who were participating in the marketplace, and by geographical constraints that limited competitive pressures. According to critics, the government's orchestration of timber assessments around privately owned processing centres in designated geographic areas led to the undervaluation of timber resources in B.C.

The first geographically based stumpage appraisal system was established for coastal forestry. Logs were assessed as 'end products' on the Vancouver Log Market. As forestry moved into the interior of the province, a new system for the assessment of logs became essential. As the transport of logs was expensive (even for smaller interior species), it was difficult to establish a log market for the more geographically dispersed interior forest industry. Here timber appraisal became concentrated around 'zonal' productive processing centres, and 'lumber' was used as the end product measure, not 'logs'. As on the coast, appraisal was based on the 'quality', 'type' and 'quantity' of end product. Allowances were made for appraisals between timber harvested according to close and intermediate utilization standards. In calculating the stumpage rate, the government included all manufacturing and marketing costs, and the sales value of the end products (allowing for an acceptable level of profit).

The end products (logs and lumber) were graded by quality (1,2,3 and culls), and according to their species (cedar, spruce, fir, cypress, pine, hemlock, cottonwood).⁶¹ Each log was evaluated in 32 foot sections by timber cruisers who worked for the companies concerned. The Forest Service monitored the cruiser process. When there was a mixed degree of forest resources on the stand, the company paid for each species proportionately. The industry argued that this system was unfair in so far as it added to the cost of evaluating the stand.⁶² (Payment of stumpage was assessed against each end product according to its identification by a set of 'minimum' or 'above' value standards).⁶³

Billing for the timber was made through the scaling process. The B.C. Forest Service sold timber on a 'pay-as-cut' basis. Each buyer paid stumpage as the logs were scaled at the processing or zonal centre. In the coastal logging area, for example, seven zones existed by the 1970's and pulp and sawlogs were appraised at each of seven regionally based centres.⁶⁴ It is important to note, however, that the market values assessed at one coastal centre were not

different from the others. The industry complained about this method, arguing in favour of a plant-specific appraisal system, but the government refused to alter the process, arguing that the cost of administering such a system would have been prohibitive.

The government has also been sensitive to permitting the deduction of profit and risk allowances in the stumpage assessments as a percentage of operating costs.⁶⁵ The profit and risk allowances were directly tied to the sales prices of the end products, as well as to general economic conditions. J.J. Juhasz reflects the complexity of the government's rebates in a 1976 essay entitled "Methods of Crown Timber Appraisal in B.C.": "The British Columbia Forest Service system allows a basic return (on operating costs plus stumpage) of 10%, plus variable risk allowances as follows: market risk 0-3%; defect and breakage risk 0-2%; risk of chance 0-4%; pioneering risk 0-2%; investment 0-2%, northcoast factor 0-2%"⁶⁶ These factors were integrated into the government's stumpage appraisals on a case-by-case basis determined by the sales value of the end products.

The sales value of the end products was determined by the B.C. Forest Service using actual pulp mill and sawmill transaction data provided by the B.C. Forest Resources Council. Assessments were based on species and volume cut as determined by the firm's cutting permit. The government divided the end products into three categories: Sawlog number 1; Sawlog number 2; and pulplog, and assessed each accordingly.⁶⁷ Until 1974 no assessment value was placed on chips that were manufactured by sawmills and used in the production of pulp.

Critics argued that this stumpage system with its complex deductions led to a systematic devaluation of timber resources. Their arguments included the following points. First, there was no end product value assessment for chips or other residual wood products until the passage of the 1974 Timber Products Stabilization Act. Secondly, the companies performed essential cruising

assessments leading to a conflict of interest as companies had a significant input in determining their own taxation rates to government. Thirdly, the allowances for profit, costs, recovery factors, and the sales values of end products were too lenient, as all were designed to promote industrial growth at the expense of potential government revenues and efficient forest management. Fourthly, little consideration was ever given to an alternative evaluation of forest resources (e.g. other uses for parks, tourism and enhancing the quality of life). Finally, the trading and assessment of end products by only one supplier (the government), a few select sellers, and few buyers provided an uncompetitive marketplace for timber resources, the most blatant example of which was the Vancouver Log Market (V.L.M.).

The Vancouver Log Market has steadily declined in importance in the post-war period due to the rise of large-scale forestry enterprises in B.C. Prior to World War II, the V.L.M. was an important exchange between independent suppliers and manufacturers. However, after the war, the market degenerated into nothing more than an uncompetitive exchange of convenience between large corporations reciprocally buying and selling specialized grades to keep their production lines functioning: "These sales are frequently made subject to an explicit or implied condition that the purchaser will later make available to the seller other logs more suitable to his needs on a reciprocal basis, at the market price prevailing at the time of the subsequent transaction."⁶⁸ Smaller firms were gradually eliminated from these trading arrangements, and a lack of access to timber on the V.L.M. gradually reduced the number of independent manufacturers to the point in the 1970's where they could not depend on the V.L.M. for supplies. Independent firms were forced either to depend on their own timber rights to continue their production or to sell out altogether.

In theory, the purpose of the V.L.M. was to ensure the availability of a variety of species, sizes, and specialized purpose grades to the largest number

of buyers. In reality, it became a specialized grades purchasing centre for large-scale enterprises. The 'cosy club' atmosphere of the V.L.M. reflected the deterioration of market mechanisms designed to facilitate the competitive transfer of supplies to buyers. However, the deterioration of the V.L.M. was only the most significant manifestation of the government's policies, which supported large-scale production through the consignment of vast amounts of timber under various licensing agreements. Smaller-scale firms were starved of information on timber availability, on timber sales on the V.L.M., on prices charged on the V.L.M., and on grades, quality and the availability of species in general.

There was no log market in the interior. Transport costs and a lack of infrastructure resulted in geographically based markets centred around production units (either sawmills or pulp mills). Professor Pearse notes in his report, however, that limited log trading did occur "...between companies for special types of logs, and [there was also] sales of private timber by farmers and ranchers."⁶⁹ The apportionment of timber to large-scale units, especially under Third Band licensing agreements, precluded the evolution of free market competition for resources. Large-scale enterprises were also reluctant to put their excess resources up for sale for fear of exceeding their 'needs' under the terms of their access agreements, and, as a consequence, having their quotas reduced.⁷⁰

The trade in residual products was also seriously constrained. In the interior transport costs and contractual obligations directing the flow of chips to the nearest pulp mill served to preclude the evolution of an open market. There were more pulp mills and sawmills on the coast, so the trade in chips was less directed and slightly more competitive. But it is important to note that in both regions, the cost of chips as inputs for pulp production was artificially low. This was due to the fact that pulp chips were not taxed as end products.

Under the terms of the 1974 Timber Products Stabilization Act (which was enacted to transfer some of the residual value of the chips to a stagnant sawmill industry and not to trap revenue for the government), chip prices were set at minimum standardized rates. The government also made no attempt to tax or to encourage marketing arrangements for other residual products including sawdust and shavings.

Finally, the government used the stumpage system to reduce the heavy capital costs associated with the building of logging roads. The cost of building roads (temporary, permanent or intermediate) was a key expenditure for the forest companies. Forest companies could write-down the cost of their road building over time through government concessions on stumpage charges. For roads constructed in the interior, the process was slightly different. No stumpage was due until all of the approved costs of construction had been recouped.⁷¹ Maintenance costs were treated in all stumpage appraisals as current operating costs. The government's road stumpage concessions depended on the degree of difficulty in building and maintaining the road, the duration of time that the road was in operation to extract timber, and the possible alternate uses of the road by the province.

Thus, the government contributed to the evolution of large-scale enterprises in three major fashions: by granting special concessions in terms of timber allocation; by subtracting value from the resource; and, by distorting the competitive bidding process for timber. Large tracts of superb timberland were assigned to the forest companies in return for the construction of enormous processing centres. (This was especially the case for MacMillan Bloedel at Nanaimo-Port Alberni and for B.C.F.P. at MacKenzie). In order to attract capital investment, the rents charged by the government for timber access were not designed to capture the full market value of the resource. Timber licenses were granted for extended periods, which allowed for continuity in production, and

provisions were also enacted to ensure that it became difficult for competitors to bid against the existing industrial arrangements. Competitors had to demonstrate that they would have been capable of sustaining or exceeding productivity levels of existing plants before they were eligible for licensing.

Technological transformations also had a significant impact on the government's land tenure agreements. Changing harvest, process and transport technology opened up opportunities for the cultivation of more and more species. This change was most evident in the interior of the province where new cutting techniques made it possible to cut smaller species more economically, and new licenses were designed for this purpose (Pulpwood Harvesting Agreements). New close utilization standards were introduced in order to ensure that all harvestable timber was efficiently consumed. Sawmills were given extra cut quotas in order to encourage the production of chips for the pulp mills. These concessions were offered in addition to the large timber allocation that was given to the pulp mill itself. Ever greater efficiencies in the forest and in production served to support the need for enormous allocations of timber resources.

The provincial government undertook two further measures (one in conjunction with the federal government) that served to promote large-scale forest enterprise development: the use of taxation arrangements to provide internal funds for the financing of major projects, and the passage of a series of reforestation initiatives that were only affordable to the largest firms.

The provincial and federal governments were generous in the provision of depreciation and depletion allowances. The governments considered tax deferments as a means of promoting regional development in the hinterland throughout the post-war period. Due to space restrictions it is impossible to discuss the complexities of these arrangements, but an analysis of general impact is possible. Throughout the post-war period, the two governments allowed

MacMillan Bloedel and B.C.F.P. to claim capital cost allowances in excess of depreciation for many of their major projects. Both firms were adept at tax deferments through transfers and tax reclassification. (In 1960, for example, B.C.F.P. transferred its total accumulated deferred tax allowances of \$4,835,000 to its 'earned surplus' category, in order to pay its taxes on a 'currently payable' basis.⁷² By changing the provisions under which the company deferred its taxes, it was able to reduce the amount of deferred taxes payable to the governments by \$562,000.)⁷³ It is obvious that the two governments encouraged this process through the passage of tax legislation designed to permit the reclassification of deferred taxes.

There were also a number of other quite permissive tax concessions. Both levels of government permitted concessions on the depreciation on buildings, machinery, equipment and write-downs on their road building costs. Almost incredibly, the rationalization expenditures of the two firms were also factored into tax concessions. The 1971 rationalization of B.C.F.P., ordered by Noranda after its 1969 purchase, was a case-in-point. B.C.F.P. managers amalgamated B.C.F.P.'s 24 subsidiaries together at public expense in 1969 (the number of subsidiaries reflected Argus' requirement that the liability for losses be isolated as much as possible from the holding company as the following quotation taken from the 1971 annual report indicates): "In the consolidation, the assets of all subsidiaries are revalued to reflect the cost of acquiring the shares and the excess over book value has been allocated principally to timber cutting rights, logging facilities and manufacturing plants and equipment. The adjusted values are being written off against earnings by appropriate charges for depletion and depreciation."⁷⁴ In short, B.C.F.P.'s rationalization expenditures were either absorbed against timber access provisions for public resources or written off as deferred taxes. Thus, it is possible to make a case that to some degree the private rationalizations of this company came at public

expense with regard to foregone taxation revenues.

The two governments offered reasons for this generosity. Depreciation allowances were calculated to account for the demanding nature of the forest business. Weather, wood conditions and the use and abuse of machinery all took a toll on plant and equipment. Depletion allowances were offered by both governments to compensate for the cutting of irreplaceable timber resources by the two firms. Both firms relied on the internally generated funds provided through deferred taxes (earnings minus taxes currently payable) as part of their growth strategies. Both firms defended their privileges by arguing that on the whole the industry was already very highly taxed, and that the tax deferment provisions were a miserly concession to an industry that was gradually being taxed into uncompetitiveness. By the end of the period under investigation (1945 - 1979), these tax advantages were being eliminated by inflationary pressures and by rising costs that were undermining economies of scale. The integrity of the accounting system also was being seriously compromised by these inflationary cycles. In the mid-1970's the depreciation and depletion provisions, which were an integral part of generating internal cash flow, were not adequately compensating for inflation. B.C.F.P., for example, estimated the damage inflation was doing to its returns in the 1976 annual report: "For example, the company's market pulp manufacturing facilities at MacKenzie, British Columbia were completed in the fall of 1972 at a cost of 65 million dollars or \$112,000 per installed daily ton. It is estimated that it now would cost 150 million dollars, or \$258,000 per installed daily ton to replace the same market pulp facilities. Reported earnings include income taxes and depreciation based on historical cost of assets rather than current values. As a result, current and past cash flows do not permit the funds to replace facilities at the end of their economic life."⁷⁵ Thus, many of the tax advantages which B.C.F.P. and M.B. had used to foster their productive expansion were being eroded by inflationary

pressures in the mid-1970's.

The government's reforestation policies also encouraged the emergence of large companies in the post-war period. Following the publication of the Sloan Royal Commission Report on forestry in B.C., the government adopted European sustained yield cultivation practices. Its sustained yield policies involved a complex series of governmental and private business responsibilities.

Sustained yield forests made significant advances after 1945. Earlier reforestation attempts involved patch logging and seed tree systems in the 1930's, and an initial foray into thinning practices was made in the 1940's. But planning and preparation of sites (slash disposal), research into tree species and their economic potential, survival potential and growth rates, optimal spacing arrangements, thinning practices, and fertilization programmes were all transformed significantly in the post-war years. Assessments were now made of soils, tree cutting techniques, stand maintenance practices, technologies, and chemicals in order to determine optimal yields at the lowest potential cost (both in monetary and environmental terms). While government was concerned with the replenishment of public resources, industry was interested primarily in assuring constant supply for its productive investment, and in deducting their silvicultural costs for tax purposes.

Perhaps the most significant development of the post-war period was the widespread philosophical acceptance of the principles of sustained yield forestry. Sloan's policies were implemented, and in the multinational segment of the forest business, corporate directors gradually accepted that silviculture was a necessary cost of staying in business. Business argued with government over silviculture, taxation arrangements, cutting regulations, post-logging clean up, site preparation for logging, reforestation, environmental and alternate use concerns, and stumpage payments, but generally corporations accepted the need for significant reforestation efforts. In 1945, production was set around

resources that were perceived to be endlessly profitable, but by 1979 forest company executives recognized that production was going to have to be more flexibly orchestrated around sustained yield growth. As part of assuming greater care for the forest resources, private firms also had to assume increasing responsibilities for the prevention and suppression of insects and fire. The elimination of pests increasingly became subject to environmental pressures as a result of sensitivities to the indiscriminate use of chemical pesticides. Changes to cutting regulations, especially the introduction of close utilization standards, altered forestry practice resulting in higher cuts and declines in residual waste.

The one obvious drawback to this policy was that only the largest firms could afford to implement it. Only the largest firms could afford the silvicultural research, harvesting, processing, and distribution of the resource products, as well as the replacement of timber resources. The reforestation effort associated with sustained yield forestry served to eliminate many of the smaller firms as well as act as a barrier to new firms that had to calculate these measures as part of their costs of doing business. Yet, the measures did ensure that some prohibitions were placed on the indiscriminate consumption of provincial resources.

Thus, with a large measure of certainty, it can be argued that the government pursued policies that promoted the establishment of competitive large-scale enterprises in the post-war period. These policies fostered an orientation towards mass produced, undifferentiated products. The two firms examined in this essay successfully developed this form of production. As we shall demonstrate, they achieved mixed success. B.C.F.P. and M.B. secured the competitive advantages necessary to undifferentiated production but, due to their competitive disadvantages, they failed to establish a business dynamic promoting the development of highly differentiated, value-added products.

Chapter III

Sources of Competitive Success:

The Integration of Production & the Achievement of Economies of Scale

The government's policies were successful in leading business to create large economy of scale enterprises. The devaluation of the timber resource induced large-scale investment into the industry by offering the prospect of reduced timber input costs towards the manufacture of undifferentiated products. Lower input costs could then be converted into competitive prices for forest products (provided that costs could be controlled over time and that productive economies of scale could be realized). Thus, two factors are most important to the production of undifferentiated products: controlled input costs and the generation of a capacity for large-scale output. The government's policies oriented business strategy towards capitalizing on both of these objectives. MacMillan Bloedel and British Columbia Forest Products used two particular strategies to achieve competitive success in their businesses. The first was to pursue an active growth policy of acquisition and merger of smaller-scale wood product enterprises, followed by undifferentiated wood product diversification and geographic expansion. The second was to develop large economies of scale production in undifferentiated forest products. These dynamic competitive advantages were sufficient to bring both of the firms a measure of success, but they also produced some competitive disadvantages (chapter IV) which prevented the firms from moving to more differentiated production. In this chapter, these competitive advantages will be examined within the separate post-war histories of both companies.

The post-war period was significant for the number of mergers,⁷⁵

acquisitions and joint projects in the forest sector. The merger strategies pursued by both MacMillan Bloedel and B.C.F.P. allowed for the realization of fully integrated capacity utilization. By integrating with smaller firms, B.C.F.P. and MacMillan Bloedel could offer transport and supplier cost savings to their buyers that could not be matched by companies of more limited scale. As these two big corporations began to invest in infrastructure to increase the scale of production, their costs of manufacturing undifferentiated wood products began to fall, creating prices that could not be matched by the increasingly uneconomic small forest product companies. Many of the smaller firms had tenure access to some of the finest timber in B.C. but did not have the productive infrastructure to exploit its potential. In many cases, B.C.F.P. and MacMillan Bloedel purchased smaller productive units only to consolidate their timber holdings. They were frequently less interested in upgrading their newly acquired industrial plant.

B.C.F.P. was fashioned through the amalgamation of various uneconomic assets. E.P. Taylor, a Toronto-based beer magnate, made his reputation and earned considerable financial benefit by combining and rationalizing the productive and distributive capacity of industries throughout Canada. He used a holding company, the Argus Corporation, to acquire industrial assets in many primary resource sectors (see complete company histories below). B.C.F.P. constituted Argus' principal forestry holdings. B.C.F.P. continued the process of merger, acquisition and joint project administration throughout our period. MacMillan Bloedel was an even more spectacular example of complementary wood product industrial mergers. H.R. MacMillan began his enterprise in the shipping of specialty wood products (railway ties) and sawmill equipment, but integrated backward into production in a major fashion in the post-war period by procuring the assets of J.H. Bloedel in 1951. Bloedel's sawmill assets had reached their productive limits (as a direct result of unambitious management) and were

procured to be part of a larger integrated complex. In 1959 MacMillan & Bloedel merged with the Powell River Company in order to capitalize on pulp and paper production. The American management of the Powell River Company had not been committing the necessary financial resources to upgrade the productive capacity of the firm. Through a variety of clever manipulations, the management of what would eventually become MacMillan Bloedel was able to systematically subordinate and then eliminate the influence of the Powell River Company's management, whose skills were procured as part of the merger. This was the only instance where a merger produced a power struggle in MacMillan Bloedel.

While integrated production offered some cost savings, it was the low-cost production of wood products at high volume that produced the key to their success. In his earlier book, Competitive Advantage: Creating and Sustaining Superior Performance, Michael Porter defines the characteristics of these firms as follows: "Low-cost producers typically sell a standard or no frills product and place considerable emphasis on reaping scale or absolute cost advantages from all sources."⁷⁷ Moving to capitalize on economies of scale in production was the most significant industrial strategy employed by the two firms. Porter defines economies of scale as follows: "Economies of scale arise from the ability to perform activities differently and more efficiently at large volume, or from the ability to amortize the cost of intangibles such as advertising and R & D over a greater sales volume. Economies of scale can result from efficiencies in the actual operation of an activity at higher scale as well as from less than proportional increases in the infrastructure or overhead needed to support an activity as it grows."⁷⁸ Thus, economies of scale can come out of a more efficient organization of the movement of goods and services in and out of the production unit as well as from "...machining, packaging, assembly, equipment maintenance, testing, printing, and facility operations."⁷⁹ The effective organization of higher volume output, from the acquisition of inputs

to low-cost production and efficient distribution of output ("...warehousing, materials handling, delivery vehicle operation, order processing, and scheduling..."),⁹⁰ provided opportunities to realize supply, production and delivery cost savings which could be passed on to buyers in the form of competitive prices. It also offered opportunities for greater aggregate profits derived from higher volume outputs.

In the post-war period both MacMillan Bloedel and B.C.F.P. were able to achieve extraordinary production gains from their investment in economies of scale. The enormous size of their forestry products complexes at MacKenzie and Crofton (B.C.F.P.), and Powell River, Nanaimo and Port Alberni (M.B.), attested to the achievement of large-scale economies in the production of undifferentiated wood products. These large-scale integrated production units offered several opportunities for economies of scale.

What then were some of the economies achieved? The largest was realized in the integration of pulp production and paper-making. The cost of transporting pulp was very expensive. By integrating pulp facilities with paper-making facilities through interconnected chutes and other transport devices, the economic manufacture of both pulp and paper could take place at (B.C.F.P.'s) Crofton, (M.B.'s) Port Alberni, Nanaimo and Powell River, and the (B.C.F.P.'s) MacKenzie complexes. Integration avoided having to dry, package and transport the water-laden commodity to a processing centre. Integrating the two functions also provided opportunities in fuel savings in so far as large hog fuel burning power complexes could be constructed to serve the energy needs of both types of product manufacture. Costs were also reduced with the full integration of production with transport mechanisms. Maintenance of the two facilities was also easier due to the possibility of allowing staff to perform specialized technical functions for the entire integrated plant.

The companies also realized a whole series of scale economies by

locating the pulp and paper facilities closer together. Containerboard manufacture was sub-divided into corrugated and fibrous materials.⁸¹ Both companies also capitalized on manufacturing linerboard at their kraft pulp mills. The costs of producing and transporting linerboard were quite high, and, as a result, a large plant was necessary to produce this commodity at economies of scale. The efficient integration of wood residuals into production also yielded significant scale economies as the following indicates: "Manufacture of lumber creates waste in the form of sawdust, edging, slabs, bark and on occasion, defective logs. Sawdust, edging, slabs, and defective wood can go into particleboard. After being peeled for plywood, nearly 50% of the log remains, which can be sewn into studs and/or chipped for pulp. The possible combinations are many."⁸² Thus, several potential scale economies could be reaped through integrated production.

The economies of scale were somewhat less impressive in lumbering and sawmilling. Technological advances such as more efficient and specialized cutting tools (tree sheers), power saws, and new forms of moving the raw resource in the woods by grapple yarders, helicopter logging and trucks increased output at lower cost. Mechanization in the woods assisted the development of economies of scale. Cost-cutting measures in logging operations coupled with their integration into large-scale companies helped reduce the average cost-per-production unit as the size of the plants increased. Production methods in B.C.F.P. and M.B. sawmills were quite efficient. The firms upgraded performance by introducing highly sophisticated cutting and processing technologies. The most significant development came with the introduction of the Kerf circular saw, which could cut much smaller logs at high speed. This technological advance combined with the introduction of close utilization standards revolutionized the sawmilling industry. The added bonus of selling wood product residuals also added to the capacity to achieve significant economies of scale production. But

it is important to note that these scale advantages were less spectacular than those attached to the transport and manufacture of integrated pulp and paper production.

The plywood and veneer industry offered even fewer opportunities for the realization of scale economies. The main constraint on plywood production was not an absence of new technologies, but, rather, the lack of access to the U.S. market. By the mid-1970's shipments of plywood were blocked by a U.S. tariff of 20%.⁸³ Cutting technologies also made it possible for these industries to exploit new species in the B.C. interior, but the barrier to the U.S. market significantly reduced the prospects of this product throughout the post-war period.

To achieve economies of scale production both companies undertook the decisions to construct large-scale integrated forest complexes. Both companies were involved in pulp and paper production, lumbering (sawmills), plywood, packaging products, special residual products (e.g. particleboard), and veneer products. The firm's managers made an analysis of whether or not to invest in each prospective business in order to maximize their profits. The assessment of projected returns was set against prospective costs. Local cultivation costs associated with the slope of the terrain, climatic conditions, and projected logging, falling, yarding, and transport expenses all had to be included. The long-term supply curves of cultivable timber also had to be assessed using variables on quality, height, weight, species, and location relative to the processing centre. Managers also had to anticipate markets, taxation rates, and the government's attitude to the investment in general, as well as the rising material and administrative costs of doing business (repairs and fees). In addition to this, managers had to evaluate the quality and cost of labour and undertake training expenses. Finally, managers also had to factor in the general business conditions based on past history (e.g. cyclical demand patterns and

supply discontinuities over time).

Despite having to analyze all of these variables, MacMillan Bloedel and B.C.F.P. were able to overcome the difficulties associated with establishing enterprises. The firms performed all the necessary economy of scale tasks of orchestrating undifferentiated product production, analyzing and exploiting market opportunities, successfully managing distribution networks, and capitalizing on local advantages.

British Columbia Forest Products:

British Columbia Forest Products was established in 1946 through the Argus Corporation, described in a 1977 study as a "closed-end investment corporation."⁸⁴ Argus owed much to the creativity and business acumen of its founder, E.P. Taylor. The Argus business empire became one of the largest in Canada with holdings in "Canadian Breweries Limited, Massey-Ferguson Limited, Dominion Stores, St. Lawrence Corporation, Dominion Tar & Chemical Company, Canadian Equity & Development, Standard Broadcasting Company, and British Columbia Forest Products."⁸⁵

The founder of Argus, E.P. Taylor, shrewdly capitalized on rationalizing industries through the holding company mechanism.⁸⁶ During the 1930's and 1940's, he gained valuable experience by consolidating the Ontario brewing industry. He acquired 17 smaller units of production and combined them into six production centres. By 1940 the beer brands of this new Canadian Breweries Limited were reduced from two hundred to nine.⁸⁷ Taylor judiciously used his capital to expand the small-scale family company, Brading Breweries, into a formidable brewing concern and in the process realized that significant opportunities existed in rationalizing Canadian business. To this end, following the completion of his work for the government of Canada in the Second World War, E.P. Taylor established the Argus Corporation. The first major Argus purchases

included Canadian Industrial Investments Limited and Ivasco Limited, and even at this early stage H.R. MacMillan was a significant shareholder in Argus Corporation.

The personal connection between H.R. MacMillan and E.P. Taylor was to prove mutually beneficial throughout the post-war years. The two men had become acquainted as a result of their \$1.00 a year service to the Canadian war effort. At MacMillan's inducement, E.P. Taylor became involved in the west-coast lumber industry by procuring the Victoria Lumber Company on MacMillan's behalf (the owner was personally opposed to selling to H.R. MacMillan) through Ivasco Ltd. in 1945. Realizing the opportunity for rationalizing the lumber industry, and anticipating a significant demand due to war damage reconstruction, Taylor became more deeply involved in the B.C. forest products sector early in 1946. On January 31, 1946, Taylor purchased the assets of Vancouver Cedar & Spruce Ltd., which was subsequently renamed British Columbia Forest Products. Immediately following this acquisition B.C.F.P. procured the assets of the Sitka Spruce Lumber Company Limited for \$280,609.⁸⁸ At this point, B.C.F.P. began its move towards integrating production by incorporating many smaller and inefficient companies into a larger-scale firm. Argus procured the assets of several companies including: "Hammond Cedar Company Limited, Industrial Timber Mills Limited, Cameron Investment and Securities Company Limited, Cameron Brothers Timber Company Limited, Cameron Lumber Company Limited, Hemmingsen-Cameron Company Limited, Osborne Bay Timber Buyers Limited, Renfrew Holdings Limited, and Realty Holdings Limited."⁸⁹ These companies' assets were transferred to B.C.F.P. control from Argus for a cash sum of \$8,988,462.⁹⁰ To finance the purchase B.C.F.P. issued 1.5 million public common shares at \$5.00 each, \$3.5 million of 4% bonds at par, and 2.5 million or \$600,000 worth of privately issued bonds (2.3/4%) which were sold to E.P. Taylor and his associates.⁹¹ Argus' initial investment in the company was 100,000 shares, which it procured on May

31, 1946. Argus eventually increased its holdings to 500,000 shares or 13.4% of B.C.F.P., but it never held more than 20% of B.C.F.P. (1954) in the entire history of its stewardship.³²

The provision of capital to procure mainly smaller-scale assets created many advantages for Argus. By combining a variety of wood products firms, Argus could rationalize management, and prices and gain greater control over output. E.P. Taylor was unapologetic about his role in eliminating uneconomic forest enterprises in B.C. In an interview cited by Sue Baptie, he inferred that managerial and scale inefficiencies would have eventually destroyed these firms over time. Small firms lacked the focus necessary for growth strategies because they were merely concerned with survival and not productive economic growth: "Most of these small companies are family owned things and some of them are very marginal, you know. These small family companies usually become available, eventually. They are worried a bit about death taxes too, and now about capital gains. But that's typical. That's the trend in almost every business. The little ones either don't succeed, or if they do succeed, when the time comes they want to get all or part of their money out."³³

B.C.F.P. had solid financial support for acquisitions and could obtain advice on the organization of scale economies, but it had a serious problem securing a continuous supply of timber for its industrial plant. In order to alleviate this problem Argus authorized (beginning in 1946) the purchase of a variety of timber companies with favourable access to timber. These companies included: "Blackstock Logging, Forest Investment Company, Hexon Timber Company, Jervis Inlet Timber Company, Oscar-Nemi Company, Malahat Logging Company, and San Juan Bay Lumber Company."³⁴ These major timber acquisitions were concentrated around Pitt Lake, Jervis Inlet and Port Renfrew. Although B.C.F.P. secured access to timber, and had procured a sufficient number of production facilities, many problems still remained. B.C.F.P.'s random purchase of companies

only available on the market in the mid-1940's meant that company assets were geographically spread out, and, as a consequence, the company had to endure greater distribution costs than some other firms.

The company complemented its policy of acquiring smaller-scale production with a program of investing in new physical plant. The first major production investment of the early 1950's was the Victoria plywood complex. The Victoria plywood mill was a joint venture between what would later become MacMillan Bloedel (then the H.R. MacMillan Export Co.) and B.C.F.P. In order to supply veneer to the Victoria plywood mill, a new B.C.F.P. sawmill was constructed at Youbou. B.C.F.P. issued \$5 million (5.1/2%) sinking fund debentures to pay for this major capital expenditure and the Victoria plywood plant began operations in 1951. Thus, a pattern was emerging: it was obvious that Argus was determined to ensure that the firms in its corporate portfolio were financially self-sustaining. Argus was committed to obtaining profits derived from its holdings, not in absorbing the risks associated with earning them. Argus' commitment to industrial expansion was conditional on continued profit growth.

The next expansion project of the 1950's was a pres-to-log plant built near the Victoria plywood plant in 1953. Pres-to-log wood board used wood residuals generated by the plywood plant, helping to capture the full economic value of the log. Locating a new product plant adjacent to the plywood plant demonstrated the measure of B.C.F.P.'s commitment to integrated expansion. Situating productive units together reduced transport, energy and production costs.

Thus, even at the earliest stages of its development, B.C.F.P. sought to achieve economies of scale by pursuing a policy of constantly merging and integrating facilities to reduce costs and increase productivity, and through the construction of large-scale production units. Capital expenditures for whole

log barkers for sawmills and new production facilities at the new Hammond sawmill for more specialized shake production were among the earliest scale commitments undertaken by the firm. A new veneer plant was constructed and integrated with the Cowichan sawmill. Chipping facilities were installed at all of the sawmills to provide for hog fuel. The firm also embarked on a machinery acquisition program for its logging operations. The chief technical advance in the woods was the introduction of trucks into logging sites to replace the railroad. Managers ensured that B.C.F.P. facilities were using the latest available technology and were being integrated to take full advantage of timber resources. Timber recovery and maximum use of the resource were top production priorities, and the log barkers that were introduced in the early 1950's were necessary to cut the logs properly to recover pulp chips.

Integrated wood products production allowed for the full-scale production of pulp and paper. The company sought to use chips from the sawmills and hemlock logs for the production of pulp, and, in 1955, announced its intention to construct a pulp facility at Crofton with a rated capacity of 425 tons of kraft pulp per day.⁹⁵ It had always been E.P. Taylor's intention to become involved in the lucrative pulp and paper market. From 1951 significant efforts were devoted to securing a Forest Management License (later T.F.L.) for a pulp mill at Crofton, but the firm was not successful in its applications until 1955 (F.M.L.#22).⁹⁶ B.C.F.P. embarked on the Crofton project in 1955 for the following reasons: The timing was propitious in so far as wage rates in the construction industry was in a low cycle; and, the productivity projections for Crofton were positive. The mill was also superbly located to capitalize on cheap timber sources. In addition, the Crofton mill was well situated to capitalize on the efficient transport and sorting of logs in the water at low-cost. The port facilities were ideal for the storage and movement of goods to American and offshore markets.⁹⁷

B.C.F.P. immediately sought out joint investors and marketing agents for the Crofton project, and, to that end, the Scott Paper Company was induced to purchase shares in the firm. Scott agreed to take a 29% interest in B.C.F.P.,⁹⁸ and B.C.F.P. secured the funds necessary for Crofton expansion without recourse to significant borrowing. It also gained access to Scott marketing networks for select Crofton mill products. Scott entered into a profitable corporate relationship with B.C.F.P. in order to secure access to pulp supplies for its manufactured products. Argus' influence on B.C.F.P. was diluted but it still was a significant shareholder in the company. B.C.F.P. managers also contracted with the Mead Corporation in 1957 to provide marketing arrangements in the United States and elsewhere for pulp not committed to Scott Paper Company. B.C.F.P. could set prices and control outputs at the production source, but markets would be serviced by Mead and Scott Paper Company sales outlets. B.C.F.P. gained access to valuable marketing and pulp manufacture skills through these arrangements.

The first bleached pulp production from the Crofton mill began in 1958 but between 1955-1958 B.C.F.P. had suffered some setbacks. The president of B.C.F.P., H.G. Munro, died unexpectedly. The Crofton mill construction costs ran \$10 million over budget for a total of \$38.4 million due to increased materials and labour costs.⁹⁹ B.C.F.P.'s professional reputation was also sullied by a scandal involving the B.C. Forest Minister concerning improprieties alleged in securing F.M.L.22 for the Crofton mill. The company was found not guilty of three charges and the fourth was stayed.¹⁰⁰ B.C.F.P. returned to a more stable footing by purchasing 15,669 acres of timberland adjacent to F.M.L.22 in 1959. The Kapor Sawmills Limited company was also thrown in for good measure, but the physical plant was of less consequence than the excellent timber resources of the coastal region. The timber purchase created room for expansion of productive pulp capacity at Crofton, and a decision was undertaken to expand

to 600 tons per day in 1959.¹⁰¹ The expansion was assisted by the purchase of 15,669 acres of timber from Kapor Sawmills Limited.¹⁰² Thus, securing access to timber assets as well as integrating them with supplier networks was an important component in the productive expansion of these large-scale units.

In 1961 T.N. Beaupre was appointed to the presidency of the company and continued the policy of integrated acquisitions and mergers as the principal growth strategy. In 1963 B.C.F.P. purchased the Moore-Whittington Lumber Company which came with 13,000 acres of timberland at Parksville. The company was also successful in securing its second F.M.L. #27 at Nitinat Lake. But the most important decision of 1963 concerned the company's expansion into the Peace River district in the interior. The decision to engage in a co-operative venture in the interior with Wenner-Gren (a Swedish industrialist) had a major impact on the development of the company.

Wenner-Gren approached B.C.F.P. through the Argus Corporation in 1963 in order to conduct a feasibility study on exploiting the resources of the Rocky Mountain Trench in the north central interior. It was clear that Argus favoured the proposal as it directed B.C.F.P. management to consider a joint venture, and was an active shareholder in the subsidiary (Alexandra Forest Industries) set up for the purpose of establishing an integrated forest products complex in what would later be the town of MacKenzie. B.C.F.P. was also induced to participate in the MacKenzie venture by the government's generous Timber Sale Harvesting License. Cheap power for MacKenzie was to be provided by the Peace River Dam project. The government also ensured the construction of a B.C. Railway line to the project and promised assistance for the construction of an integrated road network. Wenner-Gren, Argus, Mead, B.C.F.P. and Scott Paper Company all participated in the new venture. A new corporate structure, Alexandra Forest Holdings, was established with one subsidiary, Alexandra Forest Industries, to develop the project. B.C.F.P. would later assume complete control of Alexandra

Forest Holdings by buying out the Argus, Mead Corporation, Scott Paper Company, and Wenner-Gren holdings in January 1967.¹⁰³ The MacKenzie project was the most ambitious project undertaken by B.C.F.P. The company's corporate overlords and the government gave it several favourable inducements to participate. B.C.F.P. would later construct at this site one of the largest integrated forest product complexes in the province.

The benefits of fully integrated scale production were evident early in the 1960's. The downturn in the plywood market in 1960 was offset by the full-scale operating capacities of the three sawmills (Youbou, Hammond, Victoria) and of the Crofton pulp mill. The company continued its policy of buying timber resources and began operating its new log barge to transport chips to the pulp mill. In 1961, the company expanded vertically at Crofton, establishing a 350 ton per day newsprint mill for an estimated cost of \$25,000,000.¹⁰⁴ The newsprint expansion required a pulp mill expansion of 30,000 short tons per year to be completed in 1964.¹⁰⁵ The newsprint capacity was to be mostly dependent on company-supplied Crofton pulp and B.C.F.P. groundwood for its prosperity. This new industrial capacity promoted the construction of new roads and the acquisition of new logging equipment totalling \$3.4 million in 1962.¹⁰⁶ The company also expanded its production of building products manufacturing with new panelling capacity at the Victoria sawmill as well as combined lumber, siding boards, and shingles and shakes production from the Victoria, Hammond and Youbou mills.

Although much of the company's attention was being devoted to the establishing of a pulp and paper capacity, B.C.F.P. continued to invest heavily in its sawmill production. New purchases of machines for cutting and debarking, materials handling equipment, cranes, dock materials, and barges were also being undertaken in the early 1960's. The company was also one of the first to implement dry land sorting areas in the early sixties. Dry sorting areas avoided

the costs associated with desalinating the logs and the spoilage and loss of logs that floated away while being sorted. By 1963, production records were being established on an annual basis as a result of these innovations: 653,400,000 square feet of plywood on a 1/16 inch basis and 195,000 short tons of kraft pulp were produced.¹⁰⁷ Increased production was accompanied by the purchase of timber near the production centres. Once these large complexes were established, the company had to process large amounts of timber in order to continue to run the multi-product integrated complexes. Thus, once committed to massive production in a particular location, the complex had to have an ever increasing volume of timber from lands adjacent to the mill.

The 1960's was a period of enormous productive growth for B.C.F.P. The introduction of new machinery, a kamyr digester and a second recovery boiler, were helpful in boosting production. In 1964 B.C.F.P. phased in its new newsprint mill. The years 1964 and 1965 marked the beginning of a new productive enterprise for the firm at MacKenzie. The firm was cautious in the upper Peace River, deciding to secure very advantageous cutting rights before embarking on the construction of its sawmill. Nothing posed a greater challenge than the construction of plant in an undeveloped part of the province. In order to be successful at MacKenzie, the company had to make something of a wilderness. Cost factors associated with this new northern location could not be extrapolated from coastal operations. Production could not be guaranteed due to more hostile climatic conditions. There were also no amenities to attract workers. Managers were also uneasy about the costs of integrating MacKenzie production into the company's distribution networks. If the managers were initially faint of heart at the thought of this risky venture, perhaps it was the declining production advantages on the coast that induced them to invest. Production had peaked somewhat from the phenomenal rise of the early sixties, taxes on the operations were increasing, log costs were skyrocketing, and sales and administrative costs

were rising, as were labour costs.

The first MacKenzie sawmill production came on line in 1967. This bit of good news helped to offset depressing news on rising sales and administrative costs, higher labour costs, and higher wood costs. MacKenzie was becoming one of the firm's most important production centres. Its sawmill contributions boosted production to 477 million board feet.¹⁰⁸ The company also installed new equipment to process its wood product residuals more efficiently, including sawdust collection facilities at Cowichan and Port Ellice, a new boiler and a chipper at Cowichan, and new wood products packaging facilities at Hammond mill.¹⁰⁹ B.C.F.P. introduced the packaging facilities in order to provide 'bundles' of materials to customers. Packaging smaller lots into bundles made marketing more flexible and filled a product need. The company's pulp performance was less impressive due to price reductions caused by oversupply. Yet, despite the short-term performance of the pulp arm, the company acquired Swiftsure Towing to assist with water transport of its pulp and paper products.

The final year of the sixties brought the last large-scale B.C.F.P. project of our period: the decision to construct a 500 ton per day kraft pulp mill, and a plywood and veneer mill with a capacity of 350 million square feet of plywood and 455 million square feet of veneer 1/16 inch base, at MacKenzie.¹¹⁰ This integrated unit was designed to capitalize on the wood resources of the area and followed the successful introduction of the sawmill. Down on the coast, the company was making every effort to cut costs by fully mechanizing logging, plywood and sawmilling operations. Despite the positive commitment to the future of the B.C. wood products industry, coastal production figures were stagnant. To achieve maximum levels of productivity, the company continued to upgrade its industrial plant by introducing a new barker unit at Victoria, a new drying unit at Cowichan, and a residual collection system for sawdust at Port Ellice. Crofton production had almost reached its full capacity, producing 272,000 short

tons of market pulp and 222,600 short tons of newsprint by 1969.¹¹¹

B.C.F.P. also continued to make small-scale productive acquisitions throughout the 1960's with the purchase of significant timber assets such as Fourmax Logging Company with T.F.L.#4 on Thurlow Island and the F.& R. Logging Company (in 1964) with T.F.L.#36 at Phillips Arm & Frederick Arms (in 1965).¹¹² B.C.F.P. wanted to integrate these timber assets with larger-scale units of production. Two further timber license acquisitions were also made in 1967: T.F.L.#17 at Knight Inlet from Evans Forest Products Limited, and T.F.L.#4, which was incorporated into the already purchased T.F.L.#36 at Frederick Arm & Phillips Arm.¹¹³ It is clear that the government's timber licensing arrangements were considered extremely valuable commodities in the market. The company paid for these acquisitions in the mid-sixties by issuing common shares, preferred shares and sinking fund debentures. In accordance with Argus' desires, the company continued to exercise fiscal prudence which made it attractive to prospective buyers.

In 1969, the Mead Corporation in conjunction with Noranda Mines Limited made a successful bid for control of B.C.F.P. shares. Argus Corporation and Scott Paper Company opposed the hostile takeover bid but were defeated in their attempt to retain control of the firm. While holding company control offered Argus significant profit advantages, diluting control among partners to avoid the risks associated with ownership proved to be Argus' undoing. Partners brought in for their specialized marketing, production and management skills proved to be successful rivals for control of the company. These firms significantly controlled B.C.F.P.'s marketing arrangements. They were more sensitive to, and more cognizant of, changing market conditions. Argus had built and rationalized the firm; made significant contributions to the development of B.C.F.P. production and management; and undertaken to assure continuous and advantageous supply of production inputs (energy, wood, transport mechanisms)

but had left out investing in marketing. Argus had invited in partners to handle marketing, and thus control its costs, so that it could derive maximum profits and limit its own risk. But, this strategy was detrimental to Argus itself, which lost control of the firm to its marketing partners. (Argus would eventually withdraw completely from participation in B.C.F.P. on July 5th, 1976 with the sale of its remaining 500,000 share interest for approximately \$220.00 per share).¹¹⁴

After the take-over the new controlling interest, Noranda Mines Limited, held 1,074,699 common shares, or 28.9% of the total. Mead held 574,000 shares, 74,000 shares more than Argus.¹¹⁵ The Brunswick Paper Company (Argus-Scott-Mead Joint Venture) held the remaining 1,000,000 common shares.¹¹⁶ Noranda essentially left the B.C.F.P. executive officers intact, only appointing a Chairman (Alfred Powis) to replace Argus' man T.N. Beaupre, who elected not to remain with the firm. Noranda quickly ordered rationalizations in the corporate structure and, in 1971, 24 subsidiaries were combined into product division units. B.C.F.P.'s complex subsidiary structure was a direct reflection of the complex risk-controlling measures imposed by the imperatives of the Argus holding company. In order to pay for MacKenzie project expenditures, Noranda advised B.C.F.P. to assume a short-term line of credit of \$60 million. Twenty million dollars of new financing in debentures was also issued to expedite the expansion of integrated productive capacity and to extinguish some pre-existing B.C.F.P. debt arrangements for the project. It is important to note, however, that Noranda also permitted B.C.F.P. managers significant autonomy in day-to-day administration of the firm. Noranda was also involved separately in a large pulp mill venture in the Prince George region and brought its own managerial experience to the wood products industry in British Columbia.

The first year of the 1970's was a difficult one for the firm. The industry was beset by labour disputes and poor production. Crofton production

was especially poor due to labour disruptions. Market conditions were also poor and the company simply cut production and laid-off workers. Capital expenditures were significantly reduced and the only major expenditures were a veneer dryer for Cowichan and logging road expenditures and maintenance costs. Costs as a percentage of sales exploded from the consistently upper sixties and low seventies of the 1960's to a dangerous 81.4% in 1970.¹¹⁷ Poor demand and high costs were cutting into the productive health of the firm. Present costs were compromising the firm's ability to set aside money for new investments for future productivity.

The company responded in 1971 by rationalizing administrative costs and amalgamating most of its subsidiaries, including the newly acquired Cathermole-Tretheway Group Holdings (for timber and sawmills), into a central administrative unit. B.C.F.P. pressed for a full mechanization of logging operations, introducing snorkel grapple yarders, mobile grapple yarders, and night shift operations on the coast to load and unload products 24 hours per day.¹¹⁸ The company also invested in sophisticated mechanized materials handling capabilities at MacKenzie. To allow for winter sorting compressed air pipes were put into the lake at MacKenzie to warm the water. Sophisticated logging techniques (mechanical fallers and shearers) were also introduced to cut down on labour costs. Despite this optimistic commitment, B.C.F.P. was experiencing technical difficulties. The company could not get its MacKenzie stud mill (processor of small logs to close utilization standards) up and running, and pulp production was also sluggish at 220,800 short tons (75% of rated capacity).¹¹⁹ Production was held back by a glut of pulp capacity and a recovery boiler explosion at Crofton. The explosion shut down the plant for a full set of inspections for a considerable period of time.

At the beginning of the 1970's the company also became heavily interested in exploiting new opportunities in specialized paper production at

Crofton. The move to more specialized production of quality papers for magazines and of coloured papers was an important product advance for the firm, and constituted one of the very few differentiated products it manufactured. The company also expanded into a groundwood product used in newsprint from sawdust by employing large stone grinders. In order to control its own administrative costs for these and other projects, B.C.F.P. formed internal working units to supervise the MacKenzie project rather than go with outside consultants. While this had a beneficial cost-cutting effect for the company, it inhibited the growth of specialized technical consultants and engineering companies that would have benefited through sub-contracting of B.C.F.P. projects.

Rising costs, inflationary pressures and a general lack of available capital forced the company to make constant adjustments and rationalizations. B.C.F.P. purchased a 50% interest in Pinette and Therien Mills of Williams Lake, which had an excellent short log capability, and closed down the Nalos Lake logging operations due to cost.¹²⁰ The buildings were dismantled, and machinery was sold and the site was cleared. Fully integrated production between the coast and the interior raised B.C.F.P.'s productivity figures, but the firm experienced difficulties with its plywood production. The downturn in production was partially attributable to the burning down of the Douglas Plywood mill but was generally the result of declining competitiveness. Declines in sales were also the result of increased U.S. competition in Canadian markets (U.S. plywood manufacturers had lower costs). As well, the volatile housing market caused increasing inflation. Even with these downward trends, the company purchased the Canadian Plywood Corporation in 1972, establishing its Delta Plywood Division located in New Westminster.

Increasingly, environmental concerns added a new cost to pulp and paper production. From 1972 forward, increasing concern over the ecological damage caused by pulp mills precipitated investment and research into 'environmentally

friendly' production. The two levels of government and environmental groups were instrumental in ensuring that more ecologically sensitive practices were adopted. Thirteen and one half million dollars were spent at the older Crofton mill on chemical boilers, a high efficiency precipitator, a black liquor oxidation system, and kiln scrubbers to cut down on the distinctive smell produced in the kraft pulping process.¹²¹ The company embarked on this program encouraged by the news that the costs of products sold had dropped for the second consecutive year since the shocking disaster of 1970, to only 73.8% of sales revenues.¹²²

The mid-seventies was the most extraordinary period for the firm. A weakening Canadian dollar, production interruptions, energy shocks, and inflationary expansions caused serious production problems. The company did not have the financial means to build new industrial plant. Little revenues were devoted to new production as money was being spent on upgrading production facilities to meet new environmental standards at the Victoria, Cowichan and Hammond sawmills, and inflationary cycles were eating up the rest. The 1974 bill for bunker fuels for Crofton jumped nearly \$3 million between 1973 and 1974 alone.¹²³

In response to rising costs the company devoted extensive resources to modernizing its existing plant including the Crofton pulp mill. New digesters, screening systems, chipper handling machines, green and black liquor evaporators, green liquor clarifiers, brown stock washers, and bleach control systems had to be installed to keep the company operating within new stricter guidelines. The company was also compelled to introduce sophisticated fly-ash control systems at its sawmills, especially at Victoria and Hammond, and even emission control measures had to be undertaken at MacKenzie's small log mill. But their heavy upgrading commitments came with a price. By 1974 alone, approximately \$28 million of the \$44 million capital expenditures budget was being devoted to upgrading of older facilities, road building and maintenance, and the replacement

of equipment.¹²⁴ Only \$16,620,000 was being devoted to the construction of new physical plant, and that was for a new sawmill facility at Crofton.¹²⁵ The absence of a commitment to new facilities was evident in the 1975 annual report, which described capital expenditure projects as "...limited to safety projects, improvements to working conditions, major anti-pollution programs and essential expenditures necessary to maintain operating efficiency. Intensified efforts were also continued to lower costs and keep working capital requirements to a minimum."¹²⁶ The industry was not growing, but merely undertaking investments to remain at the current production levels. The company was increasingly beset by production interruptions. Labour disputes, the interruption in production while anti-pollution devices were installed, disputes with native peoples over the cultivation of forest resources (especially at Williams Lake), and increased costs for parts and chemicals were taking their toll. The company continued to introduce environmentally friendly systems including flash systems at Youbou and Cowichan mills. Filtration devices were also introduced at the Hammond and Victoria sawmills. These improvements did not substantially increase productivity, however, but merely removed some of the undesirable side-effects of the business. Production of pulp at Crofton and MacKenzie was reaching full potential at a combined 355,851 short tons in 1975.¹²⁷ The company was still devoting energies to increased environmental pressures, introducing a new kiln gas scrubbing system, a chlorine dioxide tail gas scrubber system for Crofton, and a new brown stock washing capacity at MacKenzie.¹²⁸

Even when the company's production was solid, B.C.F.P. increasingly faced supply problems. The company lost market shares in 1976 due to a B.C. Rail strike, which boosted company inventories.¹²⁹ Interruptions in the flow of goods and services between plants forced many different types of accommodations: whole log chipping, independent freight car rental, and extra shipping by sea and truck. These supply discontinuities were compounded by production start-up

problems at Crofton as the pulp mill was having some difficulties in adapting its machinery to the new production sizes of 30 pound rolls of newsprint instead of 32 pound rolls.

In the mid-seventies, B.C.F.P. made a major strategic decision to expand beyond British Columbia by participating with a Quebec-based firm (Donohue Company Limited) in the construction of a major integrated forest products complex at St. Felicien, Quebec. B.C.F.P. also purchased a specialty grades paper plant and waferboard producer in America, the Blandin Paper Products firm in Grand Rapids, Minnesota. By investing outside its productive base, B.C.F.P. was following in the footsteps of many other geographic scale economy expansions. Geographic expansion occurs when many of the localized scale production advantages begin to decline. When the company had exhausted opportunities on the coast, it advanced into the interior of the province, but by the mid-70's some limits on continued growth in B.C. were being felt. By 1976, much of the best timberland in B.C. had already been claimed, and there were increasing concerns over the future growth prospects of an undifferentiated product industry so heavily dependent on cheap and abundant timber. The resource which many believed was inexhaustible enough to keep costs down forever was increasingly showing signs of limitations. One of the most eloquent statements on rising costs in the industry had come earlier, in the 1968 annual report: "Our customers are not interested in our costs, or in the fact that we pay the highest wages, and are one of the highest taxed forest industries in the world. They are only interested in our price, quality, delivery and service. They are buying our products, not our problems, and they will not buy from us if they can obtain equivalent products at lower prices...Increases, whether they be in the form of taxes, or wages, must be related to productivity."¹³⁰ The remarkable resources that had sustained undifferentiated product scale development of the industry were starting to show their natural limits by the 1970's. Quality timber

production inputs were being used to supply revenues for three groups: workers in the industry and others who provided goods and services to them, the government, and the corporations. By the late 1970's, the declining quality and quantity of resources was contributing to a diminishing measure of prosperity for all concerned.

The company planned for the 1980's by gradually introducing thermal power generation (to cut down on oil costs) at MacKenzie and Crofton and new computerized log scanning sawmill equipment at all major sawmills (Victoria, Hammond, and MacKenzie), and by continuing the program of introducing environmentally friendly boilers, scrubbers, filtration systems, and collection systems. The firm converted its lumber sorting facilities to dry land sorting at the Victoria and Hammond sawmills and at MacKenzie after the successful introduction of this technique at the Youbou mill. Production gradually increased, but it was clear that peak production from B.C. operations was at hand with 835 million board feet of lumber.¹³¹ Pulp production was below rated capacity, some 50,000 short tons at Crofton alone, and newsprint production seemed to have peaked at the 250 short ton range.¹³² Demand for newsprint was clearly mature due to the changing nature of news collection and consumption. But the picture of stagnating prosperity was not all black. The company was planning geographic expansion into Alberta (two sawmills and a pulp mill) and new ventures in pile-driving and building materials. It also established a forest management consultant firm called Croftech.

Thus, B.C.F.P. successfully created economies of scale from large-scale, undifferentiated production in the post-war period. The infrastructure was built and investment in production and technology undertaken. Managers moved to lower costs in order to realize higher returns. In the 1950's and 1960's, investment was devoted to expanding productive capabilities while upgrading and changing to improve its business prospects. However, by the seventies, the

company's ability to expand its production was being undermined by the increased costs of labour, natural resources, and energy; by inflation; and by changes to government regulations requiring environmental standards of production. The desire to upgrade to new levels of undifferentiated production was certainly there, but the ability to achieve it was clearly diminished by expenditures needed to retain past and present production advantages.

MacMILLAN BLOEDEL:

MacMillan Bloedel became the largest integrated forest products company in British Columbia in the post-war period. The firm's development was more varied than that of B.C.F.P. MacMillan Bloedel had a three-phased development pattern. The company completed a series of major mergers and acquisitions in the 1950's; began a program of geographic expansion in the 1960's; and embarked on a policy of limited product and service diversification in the 1970's, which was unfortunately halted due to serious shipping losses in 1975 - 1976. These shipping losses were so serious that two of the most senior executives were dismissed for their poor business judgement. In a 1977 study on MacMillan Bloedel for the Royal Commission on Corporate Concentration, Professor R. Schwindt was somewhat critical of M.B.'s corporate development: "The firm expanded primarily within the forest products industries, it is no conglomerate. The movement backwards from marketing to sawmilling, to logging, and to resource management, and forward to plywood, pulp, paper and packaging manufacture constitutes a very weak degree of diversification."¹³³ To its credit, however, MacMillan Bloedel did attempt more diversification towards differentiated production than the holding company controlled B.C.F.P.

The history of MacMillan Bloedel is really the history of three separate companies, each with roots that predate the Second World War. MacMillan Bloedel was a merged combination of the H.R. MacMillan Export Company, Bloedel, Stewart

& Welch, and the Powell River Company. A brief pre-Second World War historical context is required for this firm.

J.H. Bloedel first entered into the British Columbia lumber industry in July 1911. He established a logging company at Jervis Inlet and won access to prime coastal timberland. By 1920, his company (Bloedel, Stewart & Welch) owned two sets of logging facilities at Myrtle Point in B.C. In 1924 Bloedel advanced into the production of wood shakes when he purchased a bankrupted shakes mill (Shull Lumber).¹³⁴ The company's business strategy was rudimentary; procure timber, exhaust the stand, and then move on. This happened to the company's Myrtle Point holdings which were exhausted within 15 years of establishing the logging enterprise in 1925 - 1926. In 1927 the same pattern took place at the company's other major enterprise at Union Bay where logging operations were wound up due to timber exhaustion. Returns on the logging operations were modest, hitting a pre-depression high of \$636,000 in 1929.¹³⁵ The depression took a heavy toll on the firm's earnings. Protectionism precluded timber access to the U.S. market, and U.K. purchases of lumber supplies from Russia cut drastically into sales earnings which fell from \$636,000 in 1929 to \$150,000 two years later.¹³⁶

In 1934 the company made a major decision to construct the Somass sawmill. Some of the production equipment for the mill situated near Port Alberni on Vancouver Island was gained by scavenging the holdings of other companies that had suspended operations due to the depression.¹³⁷ The Somass sawmill had a capacity of 200,000 board feet and was one of the first mills in B.C. to make efficient use of hog fuel as a power source. Ironically, at this phase of its development, Bloedel, Stewart & Welch was marketing its products through the Seaboard Lumber Company, which had been established to compete with the H.R. MacMillan Export Company. Many lumbermen and sawmill owners, including Bloedel, felt that MacMillan was price gouging for the transport of B.C. lumber

and forest products to foreign countries.

In the late 1930's, the company began expanding the scale of its production and contemplating the construction of a pulp mill at Port Alberni. In 1937 the company expanded shingle production with the construction of a new shakes mill in Vancouver. Bloedel realized that the future of the industry lay in integrated production and cutting costs, and he was personally offended at the waste of pulp chips that were needlessly being burned in beehive burners. The company was particularly interested in pulp production because of the amount of hemlock on its timberlands. Of its 52,000 acres in the Alberni Inlet and Sproat Lake area, about a quarter of the wood was hemlock mixed with balsam, which was most suitable for pulp.¹³⁸ The company wished to construct a small sulphite mill but initial efforts were halted due to the outbreak of the war. The pulp mill was slated to cost \$2.2 million but by the time it was finished in 1945 the price was closer to \$10 million.¹³⁹

The company continued to integrate production by improving its access to timber through investing in downstream logging enterprises at Sprout Lake (1944). The company also expanded its undifferentiated product line by manufacturing a pressed particleboard known as pres-to-log. In the late 1940's the firm also exhibited a degree of research progressiveness by developing a hydraulic water pressure system designed to strip bark from trees. Thus, under J.H. Bloedel and later his son Prentice, Bloedel, Stewart and Welsh was integrating its production units by constructing a sawmill and pulp mill, by erecting shingle mills, and by manufacturing fuel materials and pres-to-log particleboard. The firm also participated in the Seaboard Lumber Sales marketing network, organized in 1935 to offer B.C.-based firms a marketing alternative to the H.R. MacMillan Export Company. However, this co-operation had led to the formation of two large marketing networks, with few alternatives. Seaboard Lumber Sales lost a substantial customer in 1951 with the absorption of Bloedel,

Stewart & Welsh into MacMillan and Bloedel.

H.R. MacMillan did not begin his business career in the production of wood products. In the early post-World War I period H.R. MacMillan, a young forestry graduate, realized that few regular shipping contracts existed for the transport of B.C. wood products. The B.C. shipping market was under-served when H.R. MacMillan moved in the second decade of the twentieth century to capture an opportunity with the founding of the H.R. MacMillan Export Company. His partner, London-based Montague Meyer, realized that the construction of the Panama Canal made it possible to ship higher cost/weight ratio products to Europe. The calamity of World War I offered reconstruction opportunities and new markets for B.C. forest products in continental Europe. Later the protectionism of the 1930's allowed MacMillan to exploit captive Commonwealth markets in South Africa, Great Britain, Australia, and New Zealand, but even from the earliest days the firm's major market was the United States.

MacMillan was extremely clever in marketing the wood products on his ships. He initiated the practice of providing smaller-scale parcels of wood (10,000 ft. blocks) to the U.S. market.¹⁴⁰ He was also able to alleviate many of the risks associated with the transport of commodities that changed prices very quickly by paying the mills for the wood products only after the customer paid him. MacMillan assumed responsibility for freight, insurance and loss charges. Upon presentation of the bill of lading and the insurance policy, the customer was then obliged to pay MacMillan for the wood. He then paid the mills. MacMillan was a consummate middleman, and his function was later described by one of his business associates, W.J. Van Dusen, as follows: "We sold documents... meaning the firm was not physically involved with wood, but rather with such things as letters of credit arranged through a Vancouver bank against credit established by a foreign lumber importer."¹⁴¹ In order to maximize his return MacMillan had to ensure that freight costs were not higher than the market

value of the timber. Highly fluctuating lumber prices assured that, in order to avoid being caught with products that had significant transport costs attached to them, MacMillan had to be a keen observer of lumber markets.

In 1925 H.R. MacMillan moved into production with the purchase of a minority interest in the Chahal's Logging Company near Harrison Lake. In the following year, MacMillan purchased the Pacific Cedar Company to gain direct access to timber supplies for his shipping contracts. MacMillan continued his buying of wood products in 1928, purchasing timber assets in the Nanaimo Valley and on Malahat Mountain north of Victoria.¹⁴² MacMillan used these purchases to manufacture railway ties destined for the United Kingdom.

The inter-war years were a turbulent period for the H.R. MacMillan Export Company. The collapse of the forest products market, trade protectionism, poor credit conditions, and disastrous prices for wood products served to compromise the future prospects of the firm. In MacMillan's view, the provincial government was only compounding the situation by charging too much business tax. Even at this early production stage, MacMillan complained about his taxation, labour costs and stumpage fees. In his estimation, the government was unjustly taxing the primary resource industries in order to carry out social reform.¹⁴³ In addition to these problems, the Astexo group of timber companies (a co-operative manufacturers' association) decided in 1935 to challenge MacMillan's marketing monopoly. They formed Seaboard Lumber Sales to market their products overseas. Astexo was extremely uncooperative with MacMillan, refusing to share market information. MacMillan was forced to undertake a variety of defensive measures including buying timber and entering into production to assure both his supply and his market share.

MacMillan's responsiveness to his customers' needs became much more acute as a result of Seaboard's competition. He personally assured customers of his ability to fulfil their orders. He sought alliances with other smaller

carriers serving the B.C. market and used his own production facilities to ensure the supply of his customers.¹⁴⁴ He also increased his production holdings by purchasing Dominion Mills in 1935. The competitive pressure also forced expansion into plywood production through the purchase of British Columbia Plywood Limited. The Alberni Pacific Lumber Company was purchased in 1936, and more timberlands were also purchased. MacMillan mortgaged the Canadian White Pine Mill in order to purchase the coastal Timber Ash Valley stands. These timber acquisitions were defensive in nature, designed to preserve MacMillan's shipping contracts. The formation of Seaboard Lumber Sales threatened to cut MacMillan from the middleman role he had so successfully exploited for 20 years. His production facilities had initially been oriented towards the exploitation of small-scale markets but a threat to his marketing role forced MacMillan to enter into large-scale, undifferentiated production.

MacMillan's wartime service as a dollar-a-year man allowed him to garner valuable knowledge about the organization and administration of large-scale enterprises. During the war, MacMillan's company continued to purchase and integrate production facilities and timber assets. The most significant timber purchase was the acquisition of part of the E. & N. lands on Vancouver Island. These highly prized lands gave MacMillan favourable access to some of the most valuable timber assets on the coast. The H.R. MacMillan Company also embarked on a program of purchasing smaller mills with access to excellent timber stands, and fully 80% of these superb timberlands were Crown-granted O.T.T.'s. These valuable resources were used to great advantage by the company's three sawmills and two plywood plants.

By 1945, the H.R. MacMillan Export Company owned sawmills at Vancouver, Port Alberni and Deerholme with an output of 189 million board feet of lumber (11% of B.C. exports), and two plywood mills at Port Alberni and Vancouver.¹⁴⁵ H.R. MacMillan Export Company integrated backward into production as a means of

securing access to timber and of protecting the firm's pre-eminent position in shipping. The company also possessed an integrated warehouse network at Vancouver, Port Alberni, Winnipeg, Toronto and Montreal for the storage of wood products.¹⁴⁶ Significantly, in 1946 the company undertook to manage and market B.C.F.P. products, giving valuable management experience as well as deriving pecuniary benefits from the marketing arrangements. The year 1946 marked the beginning of the development of full economies of scale at the firm. The company controlled the Victoria Lumber & Manufacturing Company, ships, and a door factory and installed two wood chipping facilities in anticipation of the construction of a pulp mill.

In 1946 H.R. MacMillan Export Company began studying a significant expansion into pulp production. Before embarking on the project MacMillan had commissioned a careful market analysis. He had also investigated the prospective supply of wood chips for the mill, and personally had an input into the selection of the site, as described in an interview cited by Donald MacKay: "The site was chosen", said MacMillan, "because it meets the requirements of the company as to fresh water and power supply, accessibility to Island communities by highway system, safe approach and harbour for deep water shipping, central position for chip and wood supply, suitable foundations, and for costs of construction."¹⁴⁷ The three essential components needed for the construction of pulp mills were displayed here: access to timber, cheap energy and transport facilities, and access to water resources. The high operating costs of these plants made them very risky ventures unless cheap energy and timber sources were available. With the purchase of the Kennedy Lake Logging Company (and its vast lumber resources) at Alberni Inlet in 1947, the company gave a clear indication of where it wished to locate the facility.

The site for the Harmac pulp mill was set in 1948 at the mouth of the Northumberland Channel on Vancouver Island, and was excellently situated to take

full advantage of roads, access to power resources, and access to water for storage.¹⁴⁸ The key to the success of this productive venture, and indeed the whole industry, was revealed by the following excerpt from the 1949 annual report: "The lumber industry resembles the mining industry in being an extractive business in which declining profits are first felt and most keenly by those companies which lack high-grade raw material or whose costs are increased by degree of inaccessibility of raw material. The difficulty in each industry is more intensified if the individual company has been unable by constant high volume production, or by adequate and well managed mechanization to achieve low-cost units and accomplish maximum possible recovery of values."¹⁴⁹ By the late 1940's, H.R. MacMillan Export Company had come to the conclusion that it had to progress to scale production of undifferentiated wood products or perish.

In response the 1950's was a period of scale expansion through integration, mergers and the construction of plant. In 1951 MacMillan merged his firm with Bloedel, Stewart & Welsh, thereby gaining access to two superb facilities, a sawmill at Somass and a pulp mill at Port Alberni. The company also combined excellent timber holdings, principally the Hill-Wynn tracts (Bloedel, Stewart & Welsh) and the E.& N. timber access rights of MacMillan and Bloedel. The merger came about amiably, and the two firms simply exchanged shares. MacMillan owned 57% of the new company, the former Bloedel, Stewart & Welsh 43%.¹⁵⁰

Why did these firms merge? The company was clearly benefiting from the increased scale of production due to the similarity of the two company's undifferentiated products. The company also gained by integrating downstream logging into integrated production facilities. Professor Schwindt's study notes this advantageous connection at Alberni and Somass where the two forest complexes merged to the point where they were contiguous.¹⁵¹ Pulp chips from MacMillan's

sawmill at Alberni were re-routed to the Bloedel pulp mill at Port Alberni, rather than towards the Nanaimo pulp mill.¹⁵² Schwindt argues that H.R. MacMillan usurped the Bloedel firm in order to assure himself of timber supplies, while Bloedel sought to gain the most advantageous terms to wind down his firm, as "...there were no male heirs and hence no assurance that the firm would carry on after his departure. Amalgamation with MacMillan promised both survival and expansion, although, it meant a subservient position for Bloedel."¹⁵³ Economies of scale could be realized in the new firms by orchestrating production to maximize output and minimize costs. Having a larger firm meant that more capital was available for expansion and that the company could decrease its borrowing credit risk. The company also derived some benefit from increased organizational sophistication in the administration of larger-scale economies, and from integrating its production in terms of sharing technical process advantages and information. The company also claimed that increased resources could be devoted to product and process development. The most desirable aspect of the merger, however, was the combined total of 747,000 acres of timberland which the new company directly controlled.¹⁵⁴

The new company (MacMillan and Bloedel) also transformed its transport mechanisms on the coast by gradually phasing out railroad transport for truck transport to and from their processing facilities. The post-war years witnessed significant technological transformation, from the woods to the production units through to the marketing arrangements. In the woods, the introduction of powersaws and trucks revolutionized forestry practices. It also brought about the need for high levels of road construction and taxation policies designed to offset some of these costs. The new company, however, was peculiarly pessimistic about its lumber production prospects in the early 1950's. In the 1952 annual report, the firm complained that the sector was becoming uncompetitive due to the closure of mills, taxes, royalties, salaries, and costs of supplies.¹⁵⁵

Ironically, the large number of mill closures was attributable to the emergence of larger economies of scale, including those of MacMillan and Bloedel. These new large-scale mills gave price advantages which the smaller mills could not match. Acquisitions of smaller units to form integrated production and materials handling units offered opportunities of internalizing costs and increasing managerial sophistication. Smaller-scale units, without the capital to acquire these production, marketing and management opportunities were quickly disappearing.

In addition to MacMillan and Bloedel's economies of scale in sawmilling, the company also invested in new products especially at the firm's first pulp and forest products complex, Harmac. MacMillan and Bloedel's marketing skills gave it important opportunities due to its sensitivity to market conditions. H.R. MacMillan paid particular attention to customer needs, and as early as 1952 argued that quality control of production was important. Sawing, drying, trimming, planning, marking, grading, observance of contract, and inspection of the product had to receive more attention at the mill due to increased customer demand.¹⁵⁶ The company was also planning for the future in situating its research and development facilities at the plant level. The constant upgrading of process was essential to the success of the industry and of the firm.

In 1955 MacMillan and Bloedel diversified into newsprint and other paper products by purchasing newsprint machines and kraft paperboard machines for the Alberni forest complex.¹⁵⁷ The expansion was paid for using retained earnings, but the cost of building the mill and forest products complex was a nightmare for the company. Costs of materials, labour costs (due to shortages and poor quality), and administrative and selling costs all pushed costs up by \$15 million for a final total in 1958 of \$78,400,000.¹⁵⁸

In 1959 M.B. made an important policy decision to upgrade its newsprint production by merging with the Powell River Company, which had a long and

distinguished history of producing paper products in B.C. By significantly integrating forward into newsprint, MacMillan Bloedel assured itself as a player in the manufacture of paper products. The Powell River Company's operators, the Brooks-Scanlon family, had allowed the business to deteriorate. The deterioration in the plant's condition made it vulnerable to production cost increases and higher taxes. The company also was subject to market pressures generated by U.S. southern pine paper producers. Market sensitivity had deteriorated to the point where the Powell River Company was merely dependent on long-term contracts for its economic prosperity. Its marketing of specialized papers and general level of market responsiveness to new opportunities was poor, despite the company's last minute diversification activity into other undifferentiated products (container boards, cardboard packaging) prior to the M.B. merger in 1959. R. Schwindt argues that the Powell River Company sought the merger in order to integrate with a timber, plywood, and sawmilling forest products firm, and to gain access to assured timber supplies.¹⁵⁹ MacMillan Bloedel sought the merger to expand its newsprint manufacturing capacity, for access to the remaining Powell River Company's timber resources, and for more newsprint production capacity and U.S. market share.¹⁶⁰ Schwindt's contention that the merger was not the product of the declining fortunes of the Powell River Company does not seem to be correct. As he states in his report: "Between 1965 and 1976 newsprint machines 1,2,3,4, and 6, were shut down, number 5 was modernized and number 10 was added."¹⁶¹ Virtually the entire newsprint manufacturing capabilities had to be modernized beginning 5 years after the initial merger in 1959-1960.

After this merger, MacMillan Bloedel & Powell River became the largest integrated forest products company in Canada with holdings in 1960 of "...six sawmills, two newsprint mills, three pulp mills, a linerboard mill, a fine paper mill, a paper bag plant, two plywood plants, two shingle mills, a door factory, five container plants, a flakeboard plant, a charcoal factory, and a plant making

fuel logs from cedar waste."¹⁶² With the addition of new processing facilities, the firm began to capitalize on scale economy production. Full integration meant that the company could develop more sophisticated means of handling materials between firms by sending chips to plants for fuels or pulping, and by transporting materials between processing centres for inter-related production.

The company by the early 1960's had established the development pattern that would sustain it in the post-war period. The large complexes at Alberni and Nanaimo (Harmac) were well on their way to full integration. The foundations had been laid with the construction of massive forest products industrial plants on a scale unsurpassed in B.C. history. The company was also diversifying into paper products that would become a significant contributor to revenues. MacMillan and Bloedel was also involved in specialty paper production, and the merger with the Powell River Company in 1959 gave the firm what would become two huge, fully integrated newsprint production units at Port Alberni and Powell River. Three centres (Powell River, Nanaimo [Harmac], and Port Alberni) would produce between them a variety of undifferentiated wood products including newsprint, pulp, kraft paper, linerboards, corrugated paper for boxes, lumber, plywood, and shingles and shakes. All of this undifferentiated product expansion was achieved largely between 1950-1964. Between these years of phenomenal change a world-scale enterprise with fully integrated production had been formed through construction of plant. The company was in a position to fully exploit scale economies on a level unmatched in the province. Unfortunately, MacMillan Bloedel and Powell River would not match such a period of spectacular productive growth again.¹⁶³

Having achieved significant economies of scale in British Columbia by the 1960's (but missing out on interior opportunities), the company began its policy of diversification abroad. This policy was adopted in direct response to the company's limited opportunities for growth in B.C. as a result of its

decision not to participate in the expansion of forestry in the interior of the province. The company purchased corrugated box plants in Britain, approached Jardine & Matheson to become an Asian marketer for its forest products, and embarked on a major forest products complex at Pine Hills in Alabama. Productive expansion abroad was thus a natural consequence of the firm's inability to fully exploit economy of scale production in the home market.

The period of 1965-1968 was one of considerable expansion abroad¹⁶⁴ into new undifferentiated products. The company purchased an Alpenite panelboard plant from the Saskatchewan government, a 36% interest in K.N.P. a Dutch pulp and paper maker, a linerboard forest products venture at Pine Hill, Alabama (a joint venture with the United States Fruit Company), a sawmill and plywood mill at Pine Hill, a lumber marketing company (Kingsway Lumber Company) in Ontario, corrugated box plants in Jersey City and Baltimore, U.S.A., Blanchard Lumber Company of Walpole, Massachusetts, dockside investments for materials handling in Britain, and a new marketing agency in Australia (MacMillan Bloedel Proprietary Limited).¹⁶⁵ The company also invested in a Spanish paper plant, Celupal, and purchased a hard wood logging operation in the Soloman Islands for the Asian market.

Throughout the late 1960's and early 1970's the company President, J.V. Clyne, continued to move the company towards investment outside of B.C. In 1969 the company invested in a New Brunswick pulp and paper complex with the co-operation of a German firm, Feldmuhle Aktrongesellschaft. (M.B. bought out complete control of this plant in 1973). However, the company also experienced some difficulties at the Pine Hill complex with the quality of its labour, which was significantly adding to costs. The company also had to write off \$630,000 for the hardwood processing investment in the Soloman Islands due to the collapse of the Japanese market.¹⁶⁶

The 1960's was also a period of systematic upgrading and full

integration of the B.C. facilities. If the 1950's and early 1960's can be considered as a period of expansion, the mid-to-late 1960's was a period of relentless consolidation for the company in B.C. Production upgrades to existing B.C. facilities was standard business practice in these years. In 1963 a new #5 newsprint machine was installed at Alberni, increasing capacity by 140,000 short tons.¹⁶⁷ A fine paper mill for Powell River, logging equipment, chemical pulping capacity, and money for logging roads and mechanized equipment were all put into place by 1964. A major effort was devoted to modernizing the Powell River Company holdings. MacMillan Bloedel and Powell River re-configured production, putting in a #3 newsprint machine and converting two older machines to specialty products rather than replacing them. Thus, a tendency to combine older equipment with newer equipment was pursued by MacMillan Bloedel and Powell River in the post-war period. It resulted in some competitive inefficiencies, but in some ways was beneficial to the company. Older machines retained their productive value if they were maintained properly and could be reconverted without difficulty (as was the case in 1964 when the new #5 machine broke down, two older machines being converted back to newsprint production from specialty paper production). Secondly, during downturns, the company could absorb slack more easily by shutting down older machines. These operating inefficiencies could be sustained due to the absence of scale competition, and due to the immense size of the company's overall holdings. The condition of the firm's old/new plant was a direct reflection of the dynamism of the sector generally, and demonstrated the tolerance for technological stagnation and the limits of undifferentiated production.

Throughout the post-war period the company was determined to cut down on costs by mechanizing its operations. An electrostatic precipitator and new recovery boiler were introduced into Alberni in 1964 for a total cost of \$3 million, and hog fuel boilers were introduced at Powell River to cut down on

energy costs.¹⁶⁸ Portable spars and log loaders were installed at transport facilities. To reduce labour costs, the company adopted an enlightened policy of trying to set up homes for its logging employees at Masset Inlet on the Queen Charlotte Islands and Port Hardy. MacMillan Bloedel and Powell River was endeavouring to reduce labour turnover, which was inhibiting the formation of a solid integrated materials handling network from the camps to the production centres. Orchestrating distribution between outlying areas and the three main production centres was essential to company prosperity as logging operations moved greater distances from the processing units.

In 1964 the company introduced its second major transport innovation (the first being the successful introduction of the truck). New newsprint barges were phased into service to cut down shipping rates. Forty percent of newsprint goods were to be towed down the coast in the equivalent of seaborne trailer trucks.¹⁶⁹ These barges were ideal for transporting newsprint to California at reduced cost. In addition to new methods of transporting commodities, the company also invested in storage facilities and in materials handling capacities in Canada, Britain, America and Europe.

Upgrading existing facilities by adding new processing machines was the central means of achieving higher levels of economy of scale production in the late 1960's. New newsprint machines, woodsaws, and a groundwood mill were installed in Powell River, new boilers and dryers at Harmac, and a kamyr digester at Port Alberni. The firm also invested in new handling facilities, new dock facilities (for B.C. coastal operations and in England), the Kingcome Navigation Company (B.C. towboat company), and in new barges for its coastal operations.

Movement into fine papers and container materials was accompanied by expansion into specialty boards and construction materials, pile driving, pole manufacture, the introduction of K-10 product, folding milk cartons, paper bags, linerboards to suit regional demand, and new forms of newsprint grades, to name

a few of the new undifferentiated products M.B. introduced in the mid-1960's. Scale economies were being introduced in conjunction with the introduction of new technologies such as grapple yarders, sophisticated power saws, hydraulic tree sheers, chip 'n saw log cutters, new packaging technologies, and roll-on-roll-off railcar barges. The integrated scale production of undifferentiated products allowed the firm to gain maximum value for each log.

The introduction of the verti-forma newsprint machine at Powell River (brought on line in 1968) was designed to allow for further flexibility in the company's product range. MacMillan Bloedel continued to have the flexibility of leaving old machines in smaller-scale production, but this new machine allowed the company to abandon this strategy as it saw fit. Flexibility in newsprint and paper production derived from the same machine was a major technological advance. Flexibility was becoming more crucial in terms of allowing company managers to strategically deploy their resources in the most profitable manner depending upon a rigorous analysis of the various markets that the company was participating in.

Investment in new productive capacity in B.C., the verti-forma machine notwithstanding, was becoming a rarity for the company by 1968, however. Much of the money devoted to new production was being spent outside of B.C. in Alabama. The absence of commitment to upgrading B.C. facilities (especially plywood) was becoming a disturbing trend by the late sixties. The company did invest in timber and the #10 newsprint machine for Powell River, but most of the production investment was committed to the major integrated forest production at Pine Hills, Alabama (sawmill, plywood, linerboard complex).

Without investing in major new productive ventures, in the late 1960's and early 1970's, the company embarked on further cost cutting measures designed to improve scale productivity in its B.C. operations. Night logging and mobile grapple yarders were introduced as a means of improving the efficiency of

operations. (By night logging we mean that logs felled during the day were sorted at dry land sorting areas at night.) New mechanized sorting systems were introduced to reduce sorting and booming costs for small log operations.¹⁷⁰ To maximize production the company also rescheduled the operational pace of its machines at its fine paper plant. Production was increased substantially at Annacis Island (double shifts) to take advantage of the American market opportunities that had opened up as a result of the reduction in the tariff for fine papers after 1970. The company also experimented with paper grades in order to increase the speed and quality of production. Despite the interest in these upgrades, investment in new production for B.C. gradually declined due to the company's diversification strategies and foreign expansion.

As was the case with B.C.F.P., the 1970's was not a particularly prosperous period for the firm. In many ways, M.B.'s performance was worse than B.C.F.P. The relative neglect of its core productive base and flirtation with diversification caused serious hardship for the firm. In neglecting its local advantages (the foundation of its prosperity) the firm paid a price in performance and prestige.

M.B. entered the 1970's with the largest degree of scale production by far of any of the major forestry companies. Despite its influence, it was not immune to public and government pressure for environmental upgrading. Major efforts in this area were necessary and contributed substantially to costs. In 1970 M.B. spent \$30 million on waste technology treatment, including significant water treatment systems at Port Alberni, a secondary precipitator at Port Alberni (to remove saltcake from the gases of pulp mill recovery boilers), precipitator devices (to reduce hydrogen sulphide and sulphur dioxide emissions at Harmac), and a settling lagoon at Chemanius (to filter solids from mill discharges).¹⁷¹ Federal regulations on environmental pollution forced the firm to adopt more stringent measures. At Harmac a second precipitator, foam reduction devices,

cinder collection systems and salt removal systems were installed, and a program of glue and chemicals reductions was initiated.¹⁷²

In the mid-70's, M.B. sought to maximize all lumber markets, however small, and the company experimented with a variety of special lumber grades at its new 12.6 million f.b.m. plant at Lulu Island, New Westminster.¹⁷³ While the trend was towards more specialized scale production of lumber products, the company eliminated unsuccessful small-scale paper grades produced from its pulp and paper facilities. The rationalization of paper production continued with the adoption of the 30 lb. newsprint weight roll, cutting transport and production costs.

In response to this declining performance in the company's core industries, the 1970's was a period of significant diversification but, in this decade, the company moved from its traditional forestry activities into other production and service sectors. The company's traditional forestry business returns were declining by the 1970's: "In the first five years of the 1960's, sales increased by 40% and net income by 65%.¹⁷⁴ Between 1965 and 1969, however, though sales increased 47%, profits rose only 5% because of a combination of high interest rates and increased operating costs."¹⁷⁵ The company's management was clearly in the mood for more extensive diversification. In 1970 the company invested \$45.5 million in an Australian real estate development in Sydney in co-operation with its Asian marketing partner Jardine Matheson.¹⁷⁶

In 1974 M.B. made its most extensive move into more differentiated products. The company purchased Habitant Shops of Bay City, Michigan, which produced fencing. It also took 30% equity in Canatan International (prefabricated buildings) and Weldwood Building Systems in Vancouver, which also produced prefabricated buildings. It also purchased interests in Walpole Woodworkers (garden furniture, furniture, fencing) and in Energe (waste wood energy conversion systems); established a 'Ventures Group', which provided

venture seed capital to selected businesses; and purchased an interest in Dominion Aircraft Corporation (S.T.O.L. aircraft) and Hawaii Hovercraft.¹⁷⁷

The company was well on the way to diversifying into higher value products. Many of the new investments were into markets with which the company had little experience. Many of these new investments in differentiated production required costly investments in specialized human skills, production facilities, and marketing networks. Consequently, it was unclear how production, distribution and management of these widely disparate firms would be orchestrated.

The company did not have the opportunity to try. While diversifying, M.B. had also decided to re-invest in its original activity, shipping. The company's principal reason for re-investing in shipping was to capture some of the \$100 million in revenue that it apportioned for its own transport in 1973. MacMillan Bloedel was nervously watching diminishing returns on its traditional business and saw shipping as an excellent opportunity to expand its marketing activity. This decision was a dreadful miscalculation by two of M.B's chief managers, D. Timmis and G. Currie. The obsession with recovering cost disadvantages was a key factor in motivating MacMillan Bloedel to invest heavily in shipping. This short-term cost focus precluded a thoughtful examination of the long-term prospects for the shipping industry.

Poor business judgement was compounded by bad luck and serious changes to the international business climate. The Arab-Israeli War of 1973 and subsequent energy shocks sent inflationary spirals through the entire western economic system. It resulted in an extraordinary transfer of wealth from the west to middle eastern countries due to an increase in the price of oil. MacMillan Bloedel found itself locked into disadvantageous, fixed shipping contracts for the transport of commodities that did not keep pace with the extraordinary rise in inflation and costs. Egypt's re-opening of the Suez Canal

cut down on the number of long-distance charters in the transport market. The charter shipping market collapsed in 1975 due to high costs and reduced demand, resulting in operating losses of \$13 million.¹⁷⁸

The firm's problems were compounded by the commitment of the Canadian Transport Company, the shipping arm of MacMillan Bloedel, to lease/purchase more ships to add to the existing fleet of 48 vessels in a declining shipping market.¹⁷⁹ It seemed as though every strategy to overcome declining revenues that the company tried turned to dust. In the late 1960's the earnings growth rate of M.B.'s traditional businesses - wood projects and pulp and paper - had declined. These losses were compounded by losses in continental European production and by the disastrous shipping performance.¹⁸⁰

MacMillan Bloedel responded to this dangerous situation with drastic measures. On March 26, 1976, the company fired two of its most senior executives, D. Timmis and G. Currie, blaming them for their inability to anticipate the downturn in shipping, and for the diversification policy that took MacMillan Bloedel away from its traditional forest businesses. These men assumed the risks associated with their ambitious plans in order to take the firm away from the limitations associated with undifferentiated economy of scale production. Regrettably, bad luck in the form of an unanticipated war and consequent oil shocks precluded the full evolution of these strategies. The increase in energy costs in the mid-70's resulted in quick action by the firm. The company quickly built up oil storage facilities and purchased shares in an Alberta refinery. Chemical substitutes were obtained for some of the company's processes, but the oil shocks and Middle Eastern turmoil cost the company dearly. The program to install a clarifier and salt reduction systems at Harmac was put on hold.

The company retrenched and returned to its traditional enterprises. A new chief executive, C.C. Knudsen, was appointed in 1976. Knudsen had had

previous experience as an executive at Weyerhaeuser in the United States. The organization of the firm was revamped to reflect the company's undifferentiated products: pulp and paper, linerboard, building materials, and raw materials.¹⁸¹ The company cut costs wherever possible, consolidated research and development, retrenched on expansion plans, spun-off all companies not related to traditional forestry activities, suspended dividend payments, and reduced shipping commitments.

The company also began to focus again on its neglected asset base in B.C. by planning renovations worth \$450 million.¹⁸² Only 25% of company spending was allocated outside of B.C. Pulp mill equipment was to be upgraded to reduce costs and increase efficiency. M.B. also wrote off its French and Belgian pulp and paper investment in 1977, recognizing that these units of undifferentiated production were no longer functioning with appropriate economies of scale.¹⁸³ By 1979 the company was again on a solid footing. Its industrial organization had been rationalized to maximum efficiency with "seventeen logging camps, nine sawmills, three panelboard plants, two newsprint mills, three pulp mills, one fine paper mill, one paper bag and specialty plant, one panelboard plant in Saskatchewan, two panelboard plants and one corrugating medium mill in Ontario, a newsprint mill in New Brunswick (65 percent of which was owned by a Spanish government agency), and one lumber mill, two panelboard plants and a linerboard mill in Alabama. Of its twenty-four corrugated container plants, seven were in Canada, eleven in the United States, and six in the United Kingdom. In total, the company employed 24,500 people, and was largely concentrated on Vancouver Island where 10,000 men and women worked."¹⁸⁴ M.B. was the largest integrated forest products company in the province, as it had been since the 1950's, with total assets four and one half times larger than those of B.C.F.P.¹⁸⁵

In 1979 the company set aside \$1.5 billion for further investment through the 1980's in its B.C. operations, including a new sawmill for Port

Alberni and complete modernization of the plywood mills, and a new newsprint machine at Port Alberni.¹⁸⁶ Upgrading projects in environmental projects, wood collection, materials handling, road building, computerized sawmilling, and mechanized logging were also planned.

Chapter IV

The Sources of Competitive Disadvantage

While the integration of smaller-scale units coupled with the movement to capture economies of scale did provide MacMillan Bloedel and B.C.F.P. with competitive advantages, many facets of the business strategies of these two firms were uncompetitive in the post-war period. Professor Porter's business dynamic provides a competitive paradigm of excellence against which we can examine our two firms in the post-war period. Porter is interested in constructing a business dynamic that will allow firms to maximize their business advantages by continuously upgrading them. Any business disadvantage serves to limit the potentialities of the firm, inhibiting its product growth and weakening its prospects for continued profitability. More importantly for our purposes, however, is Porter's argument that a firm's competitive dynamics have a direct influence on the types of production undertaken.

Porter would most probably not be impressed with B.C.F.P. and M.B.'s sources of competitive advantage. These advantages included a government policy that encouraged the development of economy of scale forestry enterprises by providing easy access to excellent timber and other measures; the integration of uneconomic units; and the movement to undifferentiated scale production. For him, all four aspects of the competitiveness dynamic, including managerial excellence, demanding market conditions, competitive suppliers, and quality inputs of production should be present in order for the firm to move to value-added forms of differentiated production.¹⁸⁷ Weaknesses in any one of the four aspects of the business would lead either to the loss of its advantages over time or to the production of undifferentiated, lower value-added goods and services. Firms may produce undifferentiated products at high volumes to capture economies

of scale, but their long-term business prospects will be diminished as a result of their competitive limitations.

M.B. and B.C.F.P. experienced four facets of competitive disadvantage in the post-war period: timber over-abundance, which led to assured supplies and a devaluation of the resource; the absorption of supplier networks by the large-scale firms for cost purposes, eliminating competition; managerial incompetence at M.B. and a managerial narrowness of focus at B.C.F.P.; and collaborative marketing arrangements undertaken for cost purposes, which also served to diminish the competitiveness of the firms. Two direct consequences flowed from these limitations: an absence of research into new products, and an absence of spin-off businesses that could have been generated by the industry. All of these uncompetitive factors served to preclude an advancement to differentiated production by the two firms.

The quality and quantity of B.C. timber was both a blessing and a curse for the forestry companies. It was a blessing in so far as it provided an abundance of cheap raw materials to the firms' processing plants. The government of B.C. ensured that the processing plants had enough low-cost timber to accommodate their significant economic investments. The forestry regulations were designed to encourage the development of this type of undifferentiated production by large forestry enterprises. However, the timber abundance was a curse in so far as it created a mood of complacency and an assumption that the resource would last forever. The industry had a stake in assuming that it could be guaranteed cheap raw material inputs and continued to petition the government for large timber grants. These firms became dependent on cheap, abundant resources for their productivity. The government favoured the development of these investments and permitted the firms to privately trade or to petition for access to large areas of forested land. MacMillan Bloedel accumulated the largest quantity of these lands of any of the companies operating in B.C. The

most prized of these lands was the E.& N. land on Vancouver Island, which was used to great advantage by the Harmac complex. B.C.F.P. also was dependent on large allocations of timberland adjacent to the MacKenzie complex. To be economically successful, the sawmill and pulp mill complex required enormous amounts of timber and cheap power as well as connections to rail and road links. Each of these necessary infrastructure conditions was assured with government approval and assistance.

The liberal allocation of lands had a down-side in that it fostered the development of businesses that sought to preserve these advantages rather than create or anticipate new ones. The businesses, therefore, turned to lobbying the government for the retention of the system that allowed for low-cost access. The arrangements became cosy ones, but they served to take the competitive edge off the businesses. Porter argues convincingly in his book that in the post-war period the most competitive businesses have been the ones that were deprived of continuous access to raw materials. Using Japan and Germany as examples, Porter argues that greater competitive advantages are secured in a business climate that engenders a fear of supply discontinuities.¹⁸⁸ Firms are forced to compete for scarce supplies that have more value attached to them, and may also seek to substitute one set of materials for another, promoting different forms of research and development. Assured supplies of materials leads to less interest in developing supply alternatives and product substitutions as long as these materials generate profits.¹⁸⁹ Firms in this position will choose to capitalize on existing advantages for as long as possible. The government's legally binding contracts for timber access, which we identified earlier, perpetuated these arrangements over extended periods, ensuring that the value of the timber remained relatively constant. The orientation towards undifferentiated production was attributable in large measure to the devaluation of the resource. With assured supply, business created strategies that depended

on undervalued resources and resulted in less sophisticated, less value-added forms of production.

Firms gained access to timber on exceedingly advantageous terms in a second manner: they bought access to it through the acquisition of older facilities and their adjacent lands. The integration of the forest industry brought with it transformations to the industry. From the standpoint of these two firms, it made sense to integrate downstream supplier logging industries to cut down on transaction costs and to ensure supply. The integration of these supplier firms by the large-scale companies further devalued the timber resources, however. The reduction in the value of the resource was achieved through three measures. First, the integration of downstream supplier firms (i.e. logging companies, independent contractors, small-scale production facilities) served to ensure that B.C.F.P. and M.B. had greater control over the calibration of supplies to the plant. Firms could trap resource values by manipulating the transfer of supplies to the processing centre and then to market. There were limitations to this. The buyers could exert pressures on the firms to avoid price gouging by seeking out alternate suppliers, but there is little doubt that in a highly volatile industry, being able to exert control over supplies destined for production was advantageous. Secondly, the firms could control or factor out harvesting costs by contracting out their cultivation to independent contractors. They isolated the risk to themselves associated with one of the most hazardous forestry activities. Independent contractors were used on both B.C.F.P. and M.B. lands. When the market for wood products slumped, the independent contractors felt the brunt of declining orders. They were released from their obligations and were subject to unemployment. The contractors also had to absorb the costs of mechanization (renting or purchasing their own equipment), as well as the cost of insuring and accommodating the workforce at camp. Diffusing downward some of the risks and costs associated with the

cultivation of timber in a cyclical industry, while retaining control over the resources for future development was a short-term strategic business tactic of enormous importance to B.C.F.P. and M.B. But this advantage came at the cost of impoverishing the supplier industries and weakening the long-term health of the industry by undervaluing both the resource and the labour force in the woods.

Finally, both firms could artificially transfer costs and values up and down the business chain from supplier networks to production centres and vice-versa. The profit margins of the integrated supplier networks were eliminated in favour of cost savings at the production level. The value of the resource was determined at the production level and not at the source of cultivation or supply. To preserve the integrity of cost savings at the production level, the resource was undervalued both by legislative incentives promoting development and by the integration of supplier networks. This strategy may have been acceptable if it had resulted in the production of differentiated value-added products, but it was a means of undervaluing resources in order to perpetrate the production of lower-value, undifferentiated products in large-scale plants.

Competitiveness at M.B and B.C.F.P. was seriously affected by the quality and orientation of their managers as well. MacMillan Bloedel management was dominated by two figures in the post-war period: H.R. MacMillan and J.V. Clyne. Both made significant contributions to the development of MacMillan Bloedel, but their management strategies were also seriously deficient. Poor management had an impact on the orientation of production. MacMillan Bloedel managers chose business strategies orchestrated around integration, scale production, and geographic expansion in the production of undifferentiated products. The company did attempt a move to more differentiated goods and services in the early seventies, but retreated as a result of the oil crisis. B.C.F.P. made no effort at all in this direction. B.C.F.P. was administered efficiently for the Argus Corporation and then for Noranda by T.N. Beaupre and

Ian Barclay, but the firm was only part of a larger enterprise that was more concerned with the extraction of immediate profit from undifferentiated manufacturing than with a longer-term commitment to expanding into more differentiated production. The firm was integrated as part of a resources portfolio of a much larger diversified conglomerate. In the eyes of the parent, there was little need for risky forms of diversification as long as the returns were acceptable.

To be fair, the managers of both of these firms took the limited decisions necessary to construct integrated, large-scale, undifferentiated production enterprises. Through mergers and acquisitions, scale expansion abroad and across the country, and a measure of diversification (M.B. only), the two firms were able to secure prominent positions as some of Canada's largest corporations. Advancement into production was undertaken only after a suitable market had been identified. The companies were sensitive to the prospect of higher tariffs and declining market shares. MacMillan Bloedel, for example, expanded into Europe in order to secure market access for its undifferentiated products and to integrate its production through a global network. Initial expansion in Europe was in packaging plants (Hygrade Corrugated Cases and Cooks Corrugated Cases) in Great Britain in 1963. The firm followed this up in 1964 with a 36% (or \$15 million) interest in a pulp and paper production plant (Koninklyke Nederlandshe Paperfabrick) in the Netherlands. This was followed in turn by investment in G.E.C. (a pulp and paper concern) operating in Belgium and France. Expansion also took place in the United States where the company integrated its new southern pine wood products firm at Pine Hill with a number of packaging plants, which it also purchased. Canadian outputs were also funnelled into this production network that allowed for significant geographic and product integration, as these new container plant facilities helped to absorb the firm's linerboard production. Subsequent investments into South America,

Asia and Australia late in 1973 were designed to capitalize on specialized production, new resources and markets.

B.C.F.P. was much more regionally focused on B.C. production, capturing economies of scale almost exclusively in the province. The company made a daring managerial decision to move into the interior of B.C. to exploit new opportunities, although it was only involved in the project as a result of the intervention of the parent company, Argus. B.C.F.P. also relied heavily on its marketing partners in selling its products. While this provided cost advantages for the firm, it also limited the opportunities for B.C.F.P. managers to assume full control of all aspects of the business. B.C.F.P. managers were more production administrators than active managers of both production and distribution.

The company had a very narrow but relatively successful strategy for success that was supervised by the parent companies, Argus and Noranda. Superb quality resources and access to cheap power and transport enabled the company to develop successfully. Yet, the company had only a limited strategy for growth based initially on acquisitions, mergers and accumulation of uneconomic enterprises. Following this phase, the company grew through geographical expansion into unexplored forest areas. As long as returns on the manufacture of undifferentiated products remained positive, few pressures were exerted on B.C.F.P. management. One of these pressures presumably would have been to upgrade to more advanced products had the opportunities to make easier money not existed. The decision to move to more differentiated production would have come from the parent firm. Regrettably, no such decision was undertaken, and no initiatives were offered or needed by the managers of B.C.F.P. in the post-war period.

If B.C.F.P. managers were in a straight-jacket, M.B. managers had considerable discretion over the direction of the firm. H.R. MacMillan had

extensive influence over the firm's direction from the company's inception until the mid-1950's. In many ways the company reflected his personal ambitions and limitations. In Empire of Wood, Donald MacKay chronicles the extent of MacMillan's influence at the beginning of the 1950's: [MacMillan] "...also became chairman of the new finance and policy committee which ruled on policy changes, senior appointments, capital expenditure over \$100,000, and much more. MacMillan would exercise direct control of acquisition and development of timberlands, the construction of the Harmac sulphate pulp plant, and management of E.P. Taylor's British Columbia Forest Products."¹⁹⁰ The MacMillan Export Company managed B.C.F.P. from 1946 until 1953 when the management contract was terminated. The two companies also collaborated in their marketing arrangements. For the four decades that we examine in this essay, H.R. MacMillan's company provided marketing services for many of B.C.F.P.'s products. The contact between these two companies on a formal, and informal, basis was both personal and professional. The connection between E.P. Taylor and H.R. MacMillan served to promote the development of both companies. MacMillan used Taylor's good offices to make acquisitions and other private investments. Taylor used MacMillan's personal knowledge of the forest business and his marketing network to ensure the successful start-up of British Columbia Forest Products. Yet, the forest industry was not well served by this form of collusion. The management and marketing collaboration of what would become the two largest forestry firms diminished the competitive pressures in the industry as a whole.

H.R. MacMillan's control over his firm created some advantages and disadvantages. By virtue of his forestry background and marketing business, he was better placed than most executives to capitalize on B.C. resource opportunities. When integrating backward from marketing into production, he had sufficient knowledge of market conditions to plan his productive expansion. There was a major down-side, however, in having a chairman who was so intimately

involved in the day-to-day administration of the business. H.R. MacMillan's personal knowledge of the local business conditions precluded the development of more consensual management within the firm. MacMillan's penchant for coastal forestry based on a personal conviction of its superiority over interior forestry limited the geographical diversification of the firm in B.C. H.R. MacMillan Export forfeited the possibility of interior expansion due to the chairman's preference for coastal scale expansion.

This policy was a major strategic error that cost MacMillan Bloedel very dearly. H.R. MacMillan believed that coastal advantages could not be recreated in the interior. Water used for the transport of goods to market, and between the manufacturing centres, or as log holding ponds, could not be recreated in the interior. Secondly, the timber resources in the interior were not as lucrative as those in the coastal forest. The weather in the interior was colder in winter and hotter in summer, adding new challenges to logging practices. The infrastructure of roads, rails, and population centres was not as well developed, which in MacMillan's eyes made it too costly to transport the commodities to market. MacMillan disfavoured interior expansion so much that the company did not exploit the prospect of integrating coastal operations with interior ones. Geographic scale economy expansion only came outside the province, and only after H.R. MacMillan's influence had declined. New strategies and personnel were clearly needed to advance the company beyond its coastal operations.

In response to MacMillan's management, the firm in 1957 selected as his successor a man with no forestry experience: J.V. Clyne. Clyne, who had been a British Columbia Supreme Court justice, hired an American managerial consulting firm, McKinsey and Company, to provide him with ideas for managing MacMillan Bloedel. The managerial method they proposed for the sprawling 57 unit firm was adopted by Clyne. The consultants recommended that four production units (defined by their product output or production phase) be adopted: a Wood

Products Group (plywood, lumber, shingles), Pulp and Paper Group, Logging Group, and Converting Group.¹⁹¹ Planning was to be centralized at head office with day-to-day administrative affairs being factored out to production centres. McKinsey and Company introduced the bureaucratic mechanism through which production could be overseen by a central office. Policy and financial decisions were to be incorporated into a company plan that MacKay describes as follows: "In 1963, the company launched its first Five Year Plan. In addition to long range goals, each year of the next five would focus on specific operational areas: market strategies, revenue targets, cost and expense budgets, profit projections and capital expenditure programs."¹⁹² There were obvious advantages to diffusing responsibility downwards: it created managerial dynamism at the plant level and allowed for the development of practical business solutions to localized problems; it gave a sense of purpose and control to local managers and workers; it ensured that discontinuities in production at one location would not utterly destroy the integrity of the company's overall profitability; and each unit could orchestrate its own production and distribution within the master plan in order to capitalize on local factors.

The down-side of this plan, however, was that it created a central policy and strategy unit that was somewhat detached from its business enterprises. The head office formulated elaborate market studies, examined productivity flows, planned integration and the long-term strategic distribution of resources, cultivated customers, sought buyers, negotiated with governments, planned upgrading, calibrated technical efficiency, planned company goals and work tasks, and planned diversification strategies. Yet, unless sufficient attention was given to the administration of these strategies at the plant level, the whole system threatened to cut off managers from the day-to-day realities of the business that they were administering. The strategy threatened to engender the accumulation of knowledge into isolated groups; one at the

production unit and the other at the head office level. The means designed to keep the system productive was the enforcement of productivity and profitability goals by the centre onto the product or process groups. Local managers were to be pitted against each other under such a system in so far as they were responsible for performance goals set within the larger strategic plans imposed from the centre. The system diffused pressure downwards in exchange for productivity gains from the bottom up.

The policy of global-scale expansion caused some strain for MacMillan Bloedel's management. We can trace the difficulty in two fashions. First, M.B. made the acquisition of managerial talents high on the list of priorities in determining whether or not to buy or build a particular firm or plant. The acquisition of managerial talent reflected an absence of confidence in the existing managers at the firm. Second, the company embarked on a rather faddish 'Management By Objectives' program. The uncritical acceptance of each new managerial philosophy proposed by McKinsey & Company reflected an absence of intellectual discipline and the obvious lack of a managerial vision at the highest levels of the firm. Clyne accepted McKinsey and Company's recommendation that all managers were expected to establish their own personal objectives and then tailor them to the company's goals.¹⁹³ Emphasis was placed on harmonizing the individual goals of employees to the goals of the firm. McKinsey and Company also advised Clyne to decentralize control from a single executive to a triumvirate of managers involving decisions on finance and strategic policy.¹⁹⁴ This did not work due to the clash of personalities, and led to further indecisiveness at the top.

Thus, by 1969, Clyne's over-dependence on McKinsey and Company for strategic insight had led to some managerial difficulties. In the early 1960's, this managerial consultant had favoured strategic policy and administrative centralization. In order to assure productivity increases, central management

was supposed to disassociate itself from day-to-day operations of the firm. Pressure to perform was diffused downwards through productivity quotas or profitability ratios between companies in an autonomous product or process group. However, this policy served to create a strong willed administrative centre which took credit for productivity gains without having actually taken responsibility for the day-to-day decisions that brought them about. In particular, Clyne's policy of global expansion in the 1960's was partially in response to the poor judgement of not expanding into the B.C. interior. Business conditions in the home market were deteriorating: the best timber supplies had already been claimed, costs of production were beginning to cause serious concern. The general business climate in B.C. seemed to have lost its lustre due to antagonistic labour relations, the prospect of an N.D.P. government, and a measure of complacency in the forest industry.

M.B.'s decision to abandon somewhat its B.C. business advantages in the post-war period was a conscious one. Faced with rising costs of labour, natural resources, taxation, and energy, M.B. managers made the choice to expand beyond the borders of B.C., the company's traditional business base. But this global focus came with a price. Integration of production and distribution became more difficult. M.B. drew on the reserves of scale production in the home base to expand, but consequently did not undertake the necessary investment in production and process in B.C. As a result, technology stagnated and supplier industries deteriorated.

Management at M.B. was in a constant state of turmoil in the early part of the 1970's. The commitment to reinvesting in shipping to capture transport costs backfired miserably. The firm's managers merely extrapolated that a lucrative market existed for transport for bulk dry goods, which could be combined with the cost savings associated with the shipment of their own goods. A narrow focus on capturing cost savings without seriously accessing the shipping

industry's prospects in terms of international economics and politics nearly destroyed the firm. McKinsey and Company's committee management model produced only internal squabbling as executives fought for resources for their own divisions, rather than contemplating the whole. The firing of top executives, D. Timmis and G. Currie, on March 26th, 1976, marked the end of committee management and the end of M.B.'s commitment to expanding its shipping capacity. The new chief executive officer, C.C. Knudsen, eliminated M.B.'s committee management immediately after assuming control. As a senior executive at Weyerhaeuser in the United States, Knudsen revamped the organization by trimming its divisions down along product lines: pulp and paper, linerboard, building materials and raw materials. Knudsen cancelled shipping contracts where possible, bought out others, and sold many vessels. The remaining years of the seventies were marked by rationalizations and a re-commitment to the forestry business in B.C.

Thus, the management of MacMillan Bloedel in the post-war period left something to be desired. MacMillan's commitment to a coastal forest strategy precluded the cultivation of interior resources. His influence on the company was significant well into the late fifties and early sixties, to the point where he determined the firm's growth strategies. The managerial muddles continued in the 1960's with J.V. Clyne. J.V. Clyne's reliance on outside managerial advice resulted in constant changes to business organization and strategy. The firm seemed at times to be a laboratory for the latest business school theoretical models. The firm originally had a rigid bureaucratic structure, which was transformed into committee management, then converted back to a strong leader at the top of a bureaucratic chain. The end result was a lack of continuity in authority. Authority at M.B. was invested in people but not in a solid institutional framework.

With this upheaval, it was most unlikely that the firm could adapt or

endure the necessary risks associated with advancing to more differentiated production. Moving to the production of new products compromises the business's current prosperity through its heavy commitment to research and development, and to start-up and manufacturing costs. Yet, these short-term risks are essential to long-term product development. Instead M.B. chose to perpetuate undifferentiated production through scale expansion. M.B. expanded abroad to perform the same manufacturing function or to protect markets; it did not move to more advanced products. The performance of many of these ventures in Europe (e.g. Belgium, Indonesia and France) and in Asia was questionable, and was attributable to the managerial muddles at M.B. These productive enterprises were undertaken to protect markets for undifferentiated production rather than for their productive virtues. It would have been easier to protect markets if the firm's end product had had attributes that competitors could not duplicate: in short, new value-added products.

M.B.'s lack of commitment to investing in its B.C. infrastructure compounded these problems by allowing the source of its prosperity to decline. In order to progress to more differentiated products, M.B. needed to continue to generate revenue from its undifferentiated production. Research and development into new products required significant resources derived from existing production. But M.B.'s lack of commitment to at least upgrading its existing production facilities was compromising the firm's capacity to produce enough resources to undertake any future product development. In order to progress to more advanced products, the firm needed at least to protect its existing sources of competitive advantage. The central message of Porter's book holds that firms must upgrade their facilities, managerial talents, products and marketing networks if they wish to progress to differentiated production. M.B. allowed its B.C. infrastructure to decline, bought into the wrong form of marketing network (shipping), which collapsed, made little attempt to upgrade

to more advanced products, instead limiting itself to less advanced products manufactured in more places, and sought managerial talent in the form of theoretical advice from a consulting company. A litany of wasted opportunities and poor judgment precluded the advancement to more advanced products at MacMillan Bloedel.

The marketing arrangements that were undertaken by B.C.F.P. and M.B. provided false economies for the two firms and reduced competitiveness in the industry in general. The absence of competitive pressures further helped to preclude an advancement to more advanced forms of wood product manufacture. B.C.F.P., the second largest forest company operating in B.C. in the post-war period, marketed many of its products through networks that it shared with other companies. B.C.F.P. used MacMillan Bloedel, Mead and Scott Paper Company for a considerable proportion of its marketing needs. These arrangements did provide cost savings to the firm in terms of avoiding the costs of establishing and upgrading its marketing network. By using these arrangements, however, the company exposed itself to three problems. First, by not competing against each other in the marketing of their goods the two firms were able to increase artificially the value of their products in so far as they cut out the competitive pressures of marketing, competitive pricing, communications with buyers and the costs associated with the transport of their goods. Greater marketing competition may have served to force longer-term innovations in product or process, but, instead, B.C.F.P. managers chose a shorter-term strategy of pursuing transportation and communication cost savings. The wood products that both firms produced cost a lot of money to transport. By integrating their marketing networks, the firms could expand the geographic size of their markets, realizing greater economies of scale. They also could increase their power as joint sellers of similar products. But, this access to a larger market was being secured through collusive market arrangements designed to protect the

continuous manufacture of undifferentiated products. If both companies offered similar products through the same marketing mechanisms, then fewer pressures were being created for competitive variations both in product and marketing approach. Fewer pressures created less need for product or process innovation, hence the lack of interest in moving to more specialized and potentially risky production. The managers of both firms most probably figured that if one of the firms moved to a more competitive stance, the result would have been a price war that would have compromised their profit margins. B.C.F.P. was founded to make money as part of a resource-based conglomerate, not to make waves as an innovator and producer of undifferentiated wood products.

The two most obvious examples of B.C.F.P.'s marketing dependence occurred with the signing of contracts with MacMillan Bloedel and Mead. B.C.F.P. also had smaller arrangements with Scott Paper Company. We made reference to the fact earlier that B.C.F.P. was initially managed by the H.R. MacMillan Export Company during the early years of the firm. Part of the management included sales agreements signed between the two firms to allow B.C.F.P. to have its products marketed by H.R. MacMillan Export Company. This agreement continued throughout the period, although B.C.F.P. gradually set up its own sales offices in strategic markets. The extent of the contract was revealed in the 1967 corporate report: "Under the new agreement, B.C.F.P. will continue to handle local sales of lumber, shingle and shakes, and in addition will sell these products in all of British Columbia and the U.S. rail market."¹⁹⁵ In short, all sea-borne transport of B.C.F.P. products to outside markets, including to the eastern U.S. market, was undertaken by M.B.

This was not the only marketing agreement that B.C.F.P. had. In 1957 B.C.F.P. had set up a sales agreement with Mead Pulp Sales Incorporated of the United States for the Crofton mill: "Under this agreement, B.C.F.P. set prices, determined quantities to be sold, and approved all orders and contracts.

Subsequent to the agreement, Mead Pulp Sales established sub-agents in Italy, France, Germany, U.K., and South America to handle sales matters at the local level."¹³⁶ A substantial portion of B.C.F.P.'s pulp production was committed through Mead's international network. The company did have greater control over newsprint sales, however, as newsprint sales were handled by long-term contracts for select customers. The company established newsprint offices in twelve countries (the Crofton Paper Company) to capitalize on the spot market. Spot market sales were primarily in the emerging Asia-Pacific region as well as the E.E.C. and U.S.

B.C.F.P.'s collaboration with M.B., Mead and Scott Paper Company contributed to business conditions that resulted in a general lack of market sensitivity and a limited set of options in the marketing of B.C.F.P.'s products. B.C.F.P. relied on other companies for many of its marketing operations. This arrangement served to isolate the company from some of its customers and its markets. The company retained control of its process technology and its production, but was less sensitive to market changes than MacMillan Bloedel. It is here that a trap of undifferentiated production becomes apparent. In an attempt to cut costs and add value to its undifferentiated products, B.C.F.P. was bargaining away the possibility of gaining a competitive edge through innovative marketing techniques. B.C.F.P.'s desire to improve the efficiency of its productivity by cutting costs led to a prejudice that marketing was an unnecessary expense that could add little value to the product, and would reduce profits. The lack of interest in marketing by the second largest producer of wood products in the province directly contributed to the development of large-scale, Vancouver-based marketing oligopolies. The large manufacturers (like B.C.F.P.) sold softwood lumber to large forest products wholesalers, who in turn sold them to retail outlets and building contractors. By the 1970's, only three Vancouver-based major softwood marketing networks were serving the important U.S.

market: Seaboard Lumber Sales, MacMillan Bloedel, and Eacom Timber Sales.¹⁹⁷ The U.S. was essential to the prosperity of the industry and constituted the largest market for softwood lumber sales. MacMillan's marketing origins gave it an enormous shipping advantage to the east coast of the United States, but in other markets (namely the U.S. west coast and central regions) rail and truck platforms were used for the transport of goods. The absence of dynamism in the marketing of the wood products was a reflection of the unsophisticated nature of the product itself. Fewer specialized production advantages meant that fewer innovative and competitive marketing techniques were needed to sell them.

The company's marketing arrangements for undifferentiated lumber production left only one alternative when the market collapsed: to phase down production. To avoid these production cycles in pulp and newsprint, B.C.F.P. turned to the long-term contract. Long-term contracts for newsprint and pulp and paper served to place restrictions on prices, however. The firm was willing to trade the prospect of harder-edged competition with the prospect of higher returns for secure sales and lower prices. Monopoly sellers sold to monopoly buyers in a cosy arrangement that served to isolate risks to the manufacturer. When the market declined, the manufacturers chose to reduce prices gradually, but there was no evidence of competitive price wars between these two or other firms operating in B.C. in the post-war period.

The Argus Corporation also paid a significant price by engaging in these joint marketing projects. In 1969 one of the marketing partners (Mead) conspired with Noranda to take control of the company away from Argus. Not only was B.C.F.P.'s marketing arrangement detrimental to the development of differentiated production, it was also of a destructive nature in so far as Argus' desire to reduced costs and risk caused it to lose control of B.C.F.P.

MacMillan Bloedel was in a more advantageous position. As one of the select few companies that marketed what it produced, it had a greater sensitivity

to market conditions than B.C.F.P. But its dominance of this activity (to the point of virtual monopoly control of some segments) was also detrimental to the competitiveness of the two firms. An absence of competition fostered by the creation of the largest integrated marketing network lessened the pressures needed to press the firm into differentiated production.

On the surface MacMillan Bloedel's post-war marketing accomplishments seem impressive. The company was able to organize its activities associated with collecting, storing and physically distributing goods.¹⁹⁸ By acting as marketing agents for many B.C. forest products companies, M.B. was able to reduce costs and achieve economies of scale in marketing. Because they marketed basic goods, there were fewer needs for after-sales service or for quality assurance in testing and monitoring the after-sales performance of their goods. But there is no evidence to indicate that the profits derived from the economies associated with basic goods was ever applied in any significant way to research for new products or new product marketing opportunities.

M.B.'s buyers were not very dynamic, and the absence of dynamism resulted in few pressures for new products. Buyers of basic products demanded fewer sales aids and little technical support for their goods. Without upgrade pressures from buyers there was little incentive to advance to more differentiated products. Sophisticated marketing techniques associated with media representation, or product positioning, or image, were not in evidence. There were fewer needs for technical literature, buyer education, or after-sales support when compared to more differentiated products. The semi-processed nature of most of M.B.'s products did not foster specialized marketing skills. The absence of buyer pressures on M.B. for more differentiated products also inhibited the development of new marketing strategies. Thus, M.B.'s marketing division did not put any pressure on the production units to upgrade or differentiate product features.

Collaborating on marketing with other B.C. forest companies also added some inhibiting features to M.B.'s business. The harmonizing of product marketing between firms served to consolidate the orientation of production around undifferentiated products. M.B. was less likely to experiment with new products, if such experimentation led to conflict in the cosy marketing arrangements with other firms. It would be logical to assume that B.C.F.P. and M.B. probably refrained from product manufacture that would have compromised their marketing connections. Secondly, joint marketing arrangements meant that products were evaluated by joint performance.¹⁹⁹ Both firms had to harmonize production to avoid delivery problems or excessive opportunism in the market. Without this, the firms would have been producing shortages or surpluses at different times, precipitating price wars and upsetting marketing arrangements. In short, marketing collusion resulted in a loss of production autonomy and competition. In order to cut costs on undifferentiated products and production, M.B. and B.C.F.P. were prepared to position some of their products in a non-competitive manner (with each other) in order to protect their market share. While this ensured sales, it eliminated pressures to move to more differentiated production.

M.B.'s marketing network stretched back to the H.R. MacMillan Export Company. MacMillan's first marketing success was achieved in the United Kingdom through the supply of war materials and for reconstruction. The most important market, however, was the United States. The significant penetration into the U.S. eastern market in the post-war period was met with a hostile price reduction by U.S. wholesalers attempting to keep MacMillan from landing his large freighters and establishing a market share.²⁰⁰ MacMillan successfully opened this market by constructing warehouses and investing in a distribution network designed to move the goods from port to retailer outlet. The company also invested in a large network of warehouses and sales offices across Canada for

the marketing of its wood products, eventually, by the 1960's, having sales or warehousing offices in all but two provinces, Newfoundland and Prince Edward Island. The company was so predominant by 1974 that M.B. "...handled 39 per cent of all waterborne shipments which included its own production and that of British Columbia Forest Products and Triangle Pacific (together representing 20 per cent of MacMillan Bloedel's waterborne shipments)."²⁰¹

M.B. also had an extraordinary level of business in the export of its own pulp, supplying 7% of the regional U.S. market in 1971.²⁰² In terms of newsprint and fine paper, MacMillan Bloedel supplied its large customers through large-scale, long-term contracts. The largest consumer of M.B. newsprint was the California market, the largest individual consumer being the Los Angeles Times newspaper. Fine papers were 'drop shipped' by rail, road or ship.²⁰³ By 1973 in the marketing of its own paper products MacMillan Bloedel "had sales of 23 million representing 39.8% of the corrugated paper needs of the four western provinces."²⁰⁴ The costly means of transporting this product meant that marketing it was locally focused either by rail or road, but M.B.'s western provincial market share indicated how successful it was at overcoming this difficulty.

The company's marketing of all these products had made it very sophisticated in the business of materials handling. Specialized truck and rail design for the transport of forest products owed much to M.B.'s marketing skills. The configuration of their own ships to handle the full range of forest products made M.B. competitive in the movement of materials. The company's specialized barges and materials handling equipment at port were among the most sophisticated in the world.

MacMillan Bloedel's markets, which were constant throughout the period, included the U.K., U.S., Japan, E.E.C, Asia Pacific region, and the British Commonwealth. The company viewed their post-war markets with high expectations,

anticipating new home construction, infrastructure rebuilding, and the need for furnishings and wood products for new homes. By the end of the 1940's market shares were shifting, with the U.S. assuming 49% of total company produce; the U.K. 30%; South Africa 8%; British Commonwealth 10%; and others 3%.²⁰⁵ The rise in the American market meant that the company moved into much more sophisticated product sizes and grades to meet the American demand for specialized sizes for homes; as the 1950 annual report explained: "Lumber buyers are yearly becoming more exacting. They accept only a small proportion of rough green lumber. They demand accurate grading, sawing and trimming, perfect dry kilning and dressing."²⁰⁶ Thus, demand pressures did induce quality control improvements, but this should not be confused with pressures to move to more differentiated production. Customers simply wanted quality undifferentiated products. To meet this need, M.B. had to make process but not product changes.

In the 1950's the U.K. market slowly receded in importance except for specialty products and rail ties. The rise in freight rates and structural weakness in the U.K. economy served to limit market growth there. The rising freight rates of the 1950's put considerable pressures on MacMillan and Bloedel to hold their eastern U.S. market share. Plywood shipments to Canada were also slightly disappointing during the mid-1950's as the economy began to slow down slightly after the enormous boom of the immediate post-war period. Throughout the period the U.S. lumber market fluctuated according to home buying trends, but the market remained steady. The South African and Australian trade (and the Commonwealth generally) declined, matching the post-war decline in sterling area transactions. By the late 1950's fully 70% of company products were being exported out of Canada, principally to the U.S.²⁰⁷

The 1960's brought new market challenges. The Scandinavian countries were operating with considerable efficiency in the newly formed E.E.C., cutting into MacMillan Bloedel & Powell River (M.B. & P.R.) market shares in Europe and

Britain. The company was especially worried about its declining lumber, specialty products, and Kraft paper market share.²⁰⁸ The company also had considerable problems with the fluctuating exchange rates of the Canadian dollar. The dollar was overvalued relative to other currencies and tended to make money transactions between U.S. and Canada losing propositions. (The company sold its goods in American dollars). This was especially the case as the American currency weakened due to inflation caused by the Vietnam War. On the plus side was the rise in the Japanese market and the integration of MacMillan Bloedel and Powell River marketing agencies, lending even more specialization in paper marketing to the company's marketing skills.

By 1963 the U.S. markets consumed 42.1% of company products; Canada 28.5%; the U.K. 12.7%; Japan and the Orient 6.7%; and other markets 10.8%.²⁰⁹ The company clearly was heavily committed to continental U.S. and Canadian markets. In order to broaden the company's foreign markets, M.B. & P.R. entered into an agreement with Jardine-Matheson and Company to promote M.B. & P.R.'s products in the Asian market. The joint venture offered new opportunities and kept the costs of setting up an agency in a relatively unfamiliar market to a minimum. In 1963, the purchase of the company's British marketing agent, the Spicer's Group, forced M.B. & P.R. to purchase Hygrade Corrugated Cases and Cooks Corrugated Cases to gain direct access to a packaging and distribution network in Britain. The loss of M.B. & P.R.'s marketing agent forced the firm to protect its market share for Canadian inputs in the box plants and resulted in new marketing opportunities in Britain. The move into production was also induced by the British government's imposition of a tariff on boxed products.

By the mid-sixties the company was facing new challenges to its market in pulp and newsprint. In newsprint, competition and changes in the manner in which people were receiving their news were beginning to have an effect on prices, and, as a result, the company implemented a \$10.00 price reduction. The

company had been marketing its pulp through Price & Pierce in the U.K. and U.S., but, after 1965, M.B. & P.R. opened MacMillan Bloedel Pulp and Paper Sales Limited, with offices in London and New York. The company also improved the wholesale distribution of its forest materials in the eastern U.S. market with the purchase of Blanchard Lumber, a marketing firm. In Australia, the company purchased MacMillan Bloedel Pty. Limited "to sell the company's newsprint directly to the publishers instead of through a consortium of newsprint manufacturers as in the past."²¹⁰ The company continued its extensive investment in marketing infrastructure by establishing facilities for the reception and processing of graded materials in the U.S., as well as investing in a port infrastructure in England (Newport and Tilbury) "...for the reception, storage and redistribution of products. These terminals were strategically located at docks where large bulk cargo ships could be accommodated and where plenty of space was available for efficient handling and storage. Product market practices were being adjusted to conform to the new distribution concept."²¹¹ The company also formed a contract with Montague L. Meyer to move goods in Britain. Thus, M.B. moved extensively into the distribution and wholesaling of its products. It also formed joint contracts with other agencies in new markets in Asia and with smaller wholesalers in Latin America.

The extensive investments in marketing structures paid off with relatively steady market shares in the 1970's. This was important due to the fluctuating economic performance of the western economies during this period. Part of the reason for continued market share was attributable to the fact that the company continued to upgrade its marketing facilities, putting in new distribution warehouses in Thunder Bay, Edmonton, Moncton and in the U.S. at Odenton (Maryland).²¹² The company also opened up the eastern Canadian market further with a new distribution centre in Dartmouth, Nova Scotia. In order to take full advantage of the marketing opportunities given by the production centre

at Pine Hills, Alabama, the company located its building materials marketing group in Atlanta in 1976.²¹³ The extensive sales network (41 sales offices in the U.S. by 1979)²¹⁴ allowed for the contracting out of marketing services to other companies that chose not to compete directly with M.B.'s marketing network. By the 1970's M.B. had contracts with B.C.F.P., Sooke Forest Products, Acorn Forest Products Limited, River Sawmills Company, Triangle Pacific Forest Products of New Westminster, B.C., and Meadow Lake Sawmill Company of Saskatchewan.²¹⁵

Regrettably, however, the collaboration of B.C.F.P. and MacMillan Bloedel in the marketing of their products precluded the development of autonomous (B.C.F.P.) and more competitive marketing organizations in each of these two firms. This collaboration, instead of competition, eliminated some of the upgrading pressures essential to the continued success of these firms. Sadly, for these firms the meaning of the words 'orchestrating distribution' meant avoiding true competitive market pressures in one important aspect of their business. Cutting the costs of transport and marketing came at the expense of dynamic competition between these two firms in the post-war period.

Without these competitive pressures, the firms had little need to move up to more advanced forms of differentiated production. One of the manners in which we can prove that there was little enthusiasm for new products is to examine the post-war level of research and development into new products by B.C.F.P. and MacMillan Bloedel. Both firms devoted research dollars to process improvements in order to promote cost efficiency. The companies also invested considerable sums of money into more environmentally friendly forms of forest product manufacture, but little attention was paid to research and development of new products. In the 1968 corporate report, B.C.F.P. made the following statement: "The company does not maintain a separate research and development organization, but applied research is done at each plant to solve their particular operating problems. B.C.F.P. supports pure and applied forestry

research at the B.C. Research Council, Pulp and Paper Research Institute of Canada and at the universities."²¹⁶ The emphasis on process research designed to cut the costs of manufacture is clearly evident even at this late stage in the development of the firm. Without an interest in developing rare and valuable human, capital, or product innovations, B.C.F.P. was consigning itself to undifferentiated product manufacture.

The case of MacMillan Bloedel is somewhat different. M.B. did devote some resources to the development of new technologies: developing techniques of black liquor oxidation (1955) and techniques for salt removal from logs in the pulping process in 1975. The company was also able to apply new techniques in the bonding process of particleboard (low solids resin process), which served to improve the integrity of the bond at less cost. The company also introduced two new particleboard products: a high quality finished product and a "slip resistant waferboard for roof sheathing."²¹⁷ The company's applied research resulted in a variety of process refinements to plywood production including automatic veneer clipping, an automated finishing line for its products, and synthetic plastic patching for manufacturing defects. New plywood products included self-release concrete forms and K3 particleboard. In lumbering, the company was among the first to install the imported "chip n'saw" sawing machine which was able to cut logs and filter out chips for processing. It is reasonable to assume that early implementation of these innovations resulted in economies of scale and research benefits. But, it is quite evident throughout the period that M.B. devoted much of its capital towards production and process improvements, and very little towards the development of new products. Between 1972 and 1976, 73.5% (on average) of MacMillan Bloedel's research and development budget was devoted to process and production, while only 8.2% (on average) of the budget was devoted to the research into new products.²¹⁸ Without a significant research effort into new products, differentiated production was

impossible.

In more general terms, the failure of B.C.'s two largest forest companies to develop raw wood into more sophisticated products also had structural implications for the economy. The absence of spin-off industries devoted to research, or to new products, and the lack of a diverse number of professionals exchanging ideas and techniques, resulted in technological stagnation. Market conditions also deteriorated as local and other buyers did not develop more complex and sophisticated relations (based upon the exchange of information on sophisticated products). Without the largest firms in the B.C. economy devoting themselves to more complex products of higher value, great opportunities were lost. Opportunities in the manufacture of rayon products, alternative fuel sources, other possible uses of resources in the manufacture of cosmetics or health oriented products, and new forms of packaging were all foregone by these short-sighted companies.

Chapter V

Conclusion

Professor Porter's model is designed to describe how an ideal competitive business dynamic (consisting of the most beneficial combination of competitive advantages) can evolve. The object of the dynamic is to foster the development of differentiated products. According to the model four mutually supporting business conditions serve to foster a competitive environment leading to the creation of value-added products: factor input conditions; demand conditions; the conditions associated with the supplier network; and firm strategy.²¹⁹ Through the application of Porter's four variables to two British Columbia forest companies in the post-war period the factors that precluded their advancement to more advanced production have been identified. Porter asserts that business will not voluntarily move to more advanced forms of production. They have to be pressured by competition or by the extinction of some of their competitive advantages.²²⁰ Companies are unwilling to change the orientation of their production voluntarily: "The reason so few firms sustain their position is that change is extraordinarily painful and difficult for any successful organization. Complacency is much more natural. The past strategy becomes ingrained in organizational routines. Information that would modify or challenge it is not sought or filtered out. The company strategy takes on an aura of invincibility and becomes rooted in company culture...Successful companies often seek predictability and stability. They become preoccupied with defending what they have, and change is tempered by the concern that there is much to lose. Supplanting or superseding old advantages to create new ones is not considered until the old advantages are long gone."²²¹

In British Columbia easy access to and superabundance of cheap resources

(timber, water, hydro electricity) served to eliminate some of the competitive pressures on the forest industry. M.B. and B.C.F.P. rationalized their operations to realize economies of scale in undifferentiated products but did not diversify to more specialized production. The operative word that characterizes the post-war business practices of these two firms is complacency. The firms shared the prejudice that the resources were virtually inexhaustible, and the government's continued granting of large tracts of timber in return for the construction of ever larger-scale manufacturing plants did nothing to dispel this perception. The firms then lobbied for continuous access to raw materials on advantageous terms in order to perpetuate their initial advantages. At no time during the post-war period did either of these two firms suffer due to a lack of availability of timber supplies. Without discontinuities in production, the firms could not come to value the full worth of their timber resources.

Managerial incompetence and narrowness of focus also contributed to the inability to move to more advanced products. MacMillan Bloedel's inability to orchestrate its managerial strategies ossified many of the firm's business advantages. M.B. did not make adequate investment in research and development of new products, nor did it upgrade its production facilities to the degree necessary to ensure maximum efficiency. M.B. became less committed to plywood production after 1964 and allowed its sawmill and pulp mill plant to become less efficient generally. B.C.F.P.'s productivity per capita was greater than that of M.B. for the post-war period. B.C.F.P., for its part, was efficiently but narrowly run. The object was to maximize undifferentiated production, not to move to more sophisticated products. B.C.F.P. was designed, in short, to pile up profits by exploiting the manufacture of low, value-added products at high volumes in relatively secure markets in the U.S. and elsewhere.

The integration of supplier networks as part of the desire to cut costs, as well as the collaborative marketing arrangements, also significantly

constrained competition. Integrating production with downstream supplier logging industries cut transportation costs and assured the continuous supply of timber, but at the price of undervaluing the resource and impoverishing the supplier networks. Timber inputs could also be more easily controlled by the producer. If the supplier logging companies had been independent, upstream producers probably would have had to absorb greater costs in volatile markets. If demand had suddenly declined, B.C.F.P. and M.B. may have been forced to absorb the costs of higher inventories due to fixed supply contracts. The companies avoided this by exerting direct control over supply to the production centres. Unfortunately, eliminating competition at the supplier level also served to create an undervalued resource. Higher values on the resource may have created more differentiated production as independent suppliers sought to provide more reliable resources to a wider variety of producers. Instead, supplier networks were factored into the continuous production of undifferentiated products. Cost pressures were put on these suppliers either to mechanize or cut down on labour costs. In many cases, the logging companies were absorbed and independent loggers were then subject to competition on a contract basis for the privilege of harvesting company land. The two companies could control the costs of a labour-intensive aspect of their business by shifting responsibility for logging down to independent contractors. Many of the costs of mechanizing in the woods were also factored down to independent contractors.

One obvious result of this process was to stunt the growth of spin-offs of sophisticated supplier firms providing new technologies. Smaller logging firms had less money to invest in new technologies and purchased or leased them as needed. Consequently, in periods of downturn, they were forced to sell their equipment or abandon their leases. The state of the forest products market could be measured by the number of auctions of forestry equipment by independent contractors. The absorption of new technologies was thus more dependent on

cyclical variations than would have been the case had the logging companies been able to derive greater levels of value from the resource. It is thus possible to argue that greater technological innovation could have occurred in the industry had timber values been transferred downstream through higher costs to producers for the resource. Reducing the input costs of materials and labour was an important competitive advantage of these two firms. The impoverishment and absorption of the supplier businesses provided cost advantages to the upstream producers (B.C.F.P. and M.B.), but at the price of devaluing the resource in order to achieve high levels of profit in the manufacture of undifferentiated products for the firms in the post-war period.

One of two scenarios is possible for these firms. Either they will come to realize the value of their resources through scarcity and will move to more advanced production, or they will continue to manufacture undifferentiated products until the forests are exhausted. Only when the last of the trees is in sight will the hard productive decisions be made, but by then it may be too late for these very fortunate, but very limited firms.

Annotated End-notes

1. Michael E. Porter, Competitive Advantage: Creating and Sustaining Superior Performance (New York: The Free Press, 1985), p.120.
2. Ibid., p.120. The definitions offered in this earlier book complement Porter's research in The Competitive Advantage of Nations.
3. Ibid., p.33 and pp.125-126.
4. Patricia Marchak, Green Gold: The Forest Industry in British Columbia (Vancouver: University of British Columbia Press, 1983), pp.20-21.
5. Ibid., p.21.
6. Michael Porter, The Competitive Advantage of Nations (New York: MacMillan, 1990), p.71. Porter refers to these four factors as a 'diamond'. Porter believes that two other factors can have an impact on the 'diamond': the government and chance (bad luck or forces beyond the control of a particular firm or group of firms).
7. Ibid., pp.72 -73.
8. Ibid., p.617.
9. Ibid., p.619.
10. Haitley V. Lewis, "Objectives of Public Forest Policy in British Columbia: Some Economic Observations," in Timber Policy Issues in British Columbia, eds. William McKillop and Walter J. Mead (Vancouver: University of British Columbia Press, 1976), p.5.
11. M.B. Percy, Forest Management and Economic Growth in British Columbia, Ministry of Supply and Services (Ottawa: Queen's Printer, 1986), p.1.
12. Marchak, pp. 30-31.
13. Ibid., pp.30-31.
14. Porter, The Competitive Advantage of Nations, p.278.
15. Ibid., pp.617-619.
16. Ibid., pp.71-73.

17. Peter H. Pearse, Timber Rights and Forest Policy in British Columbia, 2 vols. (Victoria: Queen's Printer, 1976), II, Appendix A, p.A3.

18. Ibid., II, Appendix A, p.A4.

19. Ibid., II, Appendix A, p.A4.

20. Ibid., "Evolution of Forest Tenure Policy", II, Table A-1, Appendix A, p.A6.

21. G.L. Ainscough, "The British Columbia Forest System", in Timber Policy Issues in British Columbia, eds. William McKillop and Walter J. Mead (Vancouver: University of British Columbia Press, 1976), p.34.

22. Pearse, I, p.28.

23. The government gradually sought to tighten the excessively liberal timber access provisions of the Old Temporary Tenures (O.T.T.'s). In 1965 the government adopted the principle that the license holder had to retain "merchantable timber in commercially valuable quantities." [Pearse, II, Appendix A, p.A24] The government stipulated that the timber reserve had to be of a certain size and quality, and that the timber stand had to be economically viable. The government also called for the provision of more sophisticated forestry practices by mandating the submission of detailed harvesting plans to the Forest Service. This provision for the filing of harvesting plans was also extended to the Timber Berths in 1975.

24. Pearse, II, Appendix A, p.A9.

25. Ibid., II, Appendix A, p.A9.

26. Ibid., I, p.85.

27. Ibid., I, p.85.

28. Ibid., II, Appendix A, p.A12.

29. Ibid., II, Appendix A, p.A12.

30. Ibid., II, Appendix A, p.A13.

31. Ibid., I, p.85.

32. Ibid., II, Appendix A, p.A13.

33. Ibid., II, Appendix A, p.A14.

34. Ibid., II, Appendix A, p.A14.

35. Ibid., II, Appendix A, p.A15.

36. Ibid., II, Appendix A, p.A16.
37. Ibid., II, Appendix A, p.A16.
38. Ibid., II, Appendix A, p.A15.
39. Ibid., II, Appendix A, p.A18.
40. Ibid., II, Appendix A, p.A18.
41. Ibid., II, Appendix A, p.A19.
42. Ibid., II, Appendix A, p.A19.
43. Ibid., II, Appendix A, p.A19.
44. Ibid., II, Appendix A, p.A20.
45. Ibid., II, Appendix A, p.A20.
46. Ibid., II, Appendix A, p.A21.
47. Ibid., II, Appendix A, p.A21.
48. Ibid., II, Appendix A, pp.A21-A22.
49. Ibid., II, Appendix A, p.A22.
50. Ibid., II, Appendix A, p.A22.
51. Ibid., II, Appendix A, p.A22.
52. Ibid., II, Appendix A, p.A23.
53. Ibid., II, Appendix A, p.A23.
54. Ainscough, pp.46-47.
55. Ibid., pp.46-47.
56. Tree Farms were created by virtue of an amendment to the Taxation Act in 1951. The government was endeavouring to promote sustained yield policies, but the industry was complaining that excessive taxation preventing this from taking place. So the government established the 'Tree Farm' concept through which land users had to: maintain a specified stock of young trees (to minimum standards); establish a reforestation program (to minimum standards); harvest the timber on a sustained yield basis; or maintain a combination of any of the above. In return the government adjusted municipal tax rates accordingly. [Ainscough, p.49.]
57. Ainscough, p.49.

58. Ibid., p.49.

59. Ibid., p.49.

60. J.J. Juhasz, "Methods of Crown Timber Appraisal, in B.C.", In William McKillop & Walter J. Mead, eds., Timber Policy Issues in B.C. (Vancouver: U.B.C. Press, 1976), p.57.

61. Ibid., pp.59-60.

62. "With the exception of some minor products, the old appraisal system used only lumber values and established the dollar value of stands by applying the market value to lumber to the potential output of the stand, which in turn was estimated on the basis of zonal average lumber recovery factors (L.R.F.'s) for various species. That the trees [in a stand] are heterogeneous ...needs no elaboration. Thus, the system rewarded operators in better than average quality stands at the expense of operators in poorer than average stands." [Juhasz, p.66.]

63. Juhasz, pp.60-61.

64. Ibid., p.63.

65. Ibid., p.64.

66. Ibid., p.65.

67. Sawlog number 1 was classified as "all species 12 inch minimum top diameter for 16 ft. logs or large logs". Sawlog number 2 was "all species up to 11.9 inches top diameter for 16 foot logs; pulplogs were exclusively used for pulping processes." [Juhasz, p.67-68.]

The L.R.F.lumber recovery factor system by the 1970's presumed "that 80 per cent of the net volume is recoverable in lumber and chips for large logs, and 85 per cent for smaller logs. [Juhasz, p.70.]

The evolution of technology for cutting, processing and transport has raised the L.R.F. in stumpage calculations, and was reflected in the transformation from intermediate to close utilization standards.

68. Pearse, I, pp.167-168.

69. Ibid., I, p.300.

70. Ibid., I, pp.301-302.

71. For a full discussion of roads and costs see Peter Pearse, I, Chapter 20.

72. B.C.F.P. Annual Report, 1961, p.10.

73. B.C.F.P. Annual Report, 1961, p.10.

74. B.C.F.P. Annual Report, 1971, p.19.

75. B.C.F.P. Annual Report, 1976, p.18.

76. Mergers can be either backward (to ensure supply of production inputs) or forward (to participate in production). Backward mergers are thus frequently defensive in nature, either to ensure supplies or to cut down on transaction costs. Forward mergers, on the other hand, are frequently undertaken as part of upgrade and diversification strategies. Firms that merge forward may be seeking to secure competitive advantages associated with differentiated production, (e.g. more complex associations of management, production and distribution in order to produce more complex products with greater potential for value-added).

77. Porter, Competitive Advantage: Creating and Sustaining Superior Performance. p.13.

78. Ibid., pp.70-71.

79. Ibid., p.40.

80. Ibid., p.40.

81. R. Schwindt, The Existence and Exercise of Corporate Power: A Case Study of MacMillan Bloedel Limited, Royal Commission on Corporate Concentration, (Ottawa: Queen's Printer, March, 1977), p.117.

82. Ibid., p.149.

83. Ministry of Supply & Services Canada, Review of the Canadian Forest Products Industry, (Ottawa: Queen's Printer, 1979), p.38.

84. H.T. Seymour, Argus Corporation Limited: A Corporate Background Report, Royal Commission on Corporate Concentration, (Ottawa: Queen's Printer, January, 1977), p.1.

85. Sue Baptie, First Growth: The Story of British Columbia Forest Products Limited (Vancouver, J.J. Douglas Publishers, 1975), p.21.

86. In a brief submitted to the Royal Commission on Corporate Concentration the firm argued rather narrowly that it was not a holding company conglomerate: "Since Argus is an investment holding company with a large but minority interest in its portfolio positions, it could not be described as a conglomerate, which is usually defined as a corporation that has a predominate interest in a number of situations and, because of such an interest, accepts responsibility for their management." [Argus Corporation Brief to The Royal Commission on Corporate Concentration, October 6, 1975. In H.T. Seymour, p.21]. It is appropriate to examine a theoretical model of the holding company conglomerate in order to ascertain whether this claim was valid, and to determine the managerial and business structure that B.C.F.P. was a part of.

R. Winsbury, writing in Management Today in 1969, argues that those who fashion conglomerates do so to achieve one simple objective, rationalization: "What it does is to buy up indifferently run companies, sell off uneconomic bits, rationalize management, install sound business principles, possibly amalgamate similar companies into larger and more viable units, and then sell off part or all of the shares at a greatly enhanced price." [P. Winsbury, "Slater Walker's Non Conglomerate". (August 1969), p.82, in W. Stewart Howe, Industrial Economics: An Applied Approach (London: MacMillan Press Ltd., 1978), p.133.]

The holding companies which control the firms may in turn be controlled by a small number of shareholders, each of whom exercises considerable influence over the firms in the holding company's portfolio. The holding company's pyramid control device is excellently described in the following passage: "In this case, a small group of shareholders seems a sufficient number of shares to control a holding company which, in turn, holds sufficient shares to control a number of other companies. For example, owning 25% of a floating stock could give complete control of a set of operating companies through control of 50% of the operating companies. In the case of pyramiding, this ownership leverage could be increased by simply adding another holding company as an intermediary between the holding company and the operating companies." [Stephen D. Berkowitz et al., Enterprise Structure and Corporate Concentration: A Technical Report. Royal Commission on Corporate Concentration, Study No.17. (Toronto: Institute for Policy Analysis, University of Toronto, August, 1976): p.38].

Viewed from inside, holding company conglomerates have certain advantages. First, firms inside the conglomerate can cut down on transaction costs. Secondly, if they succeed in crowding out the competition in a particular market they can realize certain arbitrage advantages (by taking their low price market goods to a higher price market category). The market then becomes a captive one, paying artificially higher prices for commodities as a consequence of conglomerate penetration of the industry. Thirdly, there are also considerable financial advantages. Holding company conglomerates constitute private capital markets. Managers can use their deeper pockets to reduce prices or to buy smaller-scale businesses. Banks and other institutions are also more willing to lend for the long-term to a business with diversified product lines. There seems little doubt that Argus was a holding company conglomerate. Argus was designed to reap pecuniary rewards by combining and rationalizing the activities of a variety of resource based producers. B.C.F.P. was the forest products arm of the holding company.

- 87. Seymour, p.8.
- 88. Baptie, pp.321-324.
- 89. Baptie, pp.21-24.
- 90. Seymour, p.66.

91. Ibid., p.67.
92. Ibid., p.67.
93. Baptie, p.27.
94. Seymour, p.129.
95. B.C.F.P. Annual Report, 1955, p.3.
96. "The license combined two blocks on the west coast near Tofino with one block in the Renfrew area and two in the Lake Cowichan Area". Baptie, p.9.
97. Baptie, p.221.
98. Ibid., p.9 & pp.27-29.
99. Ibid., P.10.
100. Ibid., P.10.
101. B.C.F.P. Annual Report, 1959. p.3.
102. Ibid., p.3.
103. Baptie, p.12. (B.C.F.P. bought out Argus by offering 62,500 B.C.F.P. shares for Argus' Alexandra Forest Industries holdings).
104. B.C.F.P. Annual Report, 1961, p.6.
105. B.C.F.P. Annual Report, 1962, p.3.
106. Ibid., p.4.
107. B.C.F.P. Annual Report, 1963, p.11.
108. B.C.F.P. Annual Report, 1967, p.8.
109. Ibid., p.8.
110. B.C.F.P. Annual Report, 1969, p.2.
111. Ibid., p.9.
112. Baptie, p.14.
113. Ibid., p.14.
114. Seymour, Introduction, p.(xv).
115. Ibid., p.133.
116. Ibid, p.133.

117. B.C.F.P. Annual Report, 1970, p.18.
118. B.C.F.P. Annual Report, 1971, p.5.
119. Ibid., p.7.
120. B.C.F.P. Annual Report, 1972, p.7.
121. Ibid., p.9.
122. Ibid., p.19.
123. B.C.F.P. Annual Report, 1973, p.4.
124. B.C.F.P. Annual Report, 1974, p.20.
125. Ibid., p.20.
126. B.C.F.P. Annual Report, 1975, p.2.
127. Ibid., p.8.
128. B.C.F.P. Annual Report, 1977, pp.13-14.
129. Ibid., pp.9-10.
130. B.C.F.P. Annual Report, 1968, p.4.
131. B.C.F.P. Annual Report, 1978, p.6.
132. Ibid., p.8.
133. Schwindt, p.19.
134. Donald MacKay, Empire of Wood: The MacMillan Bloedel Story (Vancouver: Douglas & McIntyre, 1982), p.73.
135. Ibid. p.78.
136. Ibid., p.80.
137. Ibid., p.82.
138. Ibid., p.85.
139. Ibid., p.88.
140. Ibid., p.96.
141. Ibid., p.96.
142. Ibid., p.106.
143. Ibid., p.117.

144. Ibid., p.125.
145. H.R. MacMillan Export Company Annual Report, 1945, p.5.
146. Ibid., p.5.
147. MacKay, p.157.
148. Ibid., p.157.
149. H.R. MacMillan Export Company Annual Report, 1949, p.7.
150. MacKay, p.170.
151. Schwindt, p.13.
152. Ibid., p.13.
153. Ibid., p.14.
154. MacKay, p.174.
155. MacMillan & Bloedel Annual Report, 1952, p.9.
156. MacMillan & Bloedel Annual Report, 1954, p.9.
157. MacKay, p.177.
158. MacMillan & Bloedel Annual Report, 1958, p.9.
159. Schwindt, p.16.
160. Ibid., p.16.
161. Ibid., p.18.
162. MacKay, p.230.
163. Productivity Tables for the two companies show steady growth in the manufacture of undifferentiated forest products during this period. (See Appendix A: Figures A-1, A-2).
Sources: B.C.F.P. Annual Reports, 1960-1969; MacMillan Bloedel Annual Report, 1969, "Historical Review", pp.18-19.
164. MacKay, pp.260-263.
165. Ibid., pp.260-263.
166. Ibid., p.280.
167. MacMillan Bloedel & Powell River Annual Report, 1963, p.8.
168. MacMillan Bloedel & Powell River Annual Report, 1964, p.10.
169. MacMillan Bloedel & Powell River Annual Report, 1964, p.12.

170. MacMillan Bloedel Annual Report, 1969, p.7.
171. MacMillan Bloedel Annual Report, 1970, pp.16-17.
172. MacMillan Bloedel Annual Report, 1972, p.9.
173. MacMillan Bloedel Annual Report, 1973, p.6.
174. MacKay, p.280.
175. Ibid., p.280.
176. Ibid., p.282.
177. Ibid., pp.292-293.
178. Ibid., p.303.
179. Ibid., p.319.
180. Ibid., p.321.
181. It should be noted that federal law prohibited the sale of unmanufactured timber, "which is interpreted to include logs, pulp chips, and certain other mill residuals. [Pearse, p.305.] It was possible to export these restricted products if expressed permission was granted through a permit. However, only small amounts of these restricted products were ever exported. Most of the restricted products were destined for the Japanese market in the 1970's. Small amounts of chips were also exported to U.S. markets during the post-war period.
182. MacMillan Bloedel Annual Report, 1978, p.3.
183. MacKay, p.324.
184. Ibid., p.332.
185. Schwindt, p.23.
186. MacMillan Bloedel Annual Report, 1979, p.63.
187. Porter, The Competitive Advantage of Nations, p.136.
188. Ibid., pp.172-175.
189. Ibid., pp.169-170.
190. MacKay, pp.160-161.
191. Ibid., p.247.
192. Ibid., p.248.
193. Ibid., p.271.

194. Ibid., pp.271-273.
195. British Columbia Forest Products Annual Report, 1967, p.9.
196. Baptie, p.9.
197. Pearse, I, p.292.
198. Porter, Competitive Advantage: Creating and Sustaining Superior Performance, p.40.
199. Ibid., pp.337-348.
200. Schwindt, p.58.
201. Ibid., p.58.
202. Ibid., pp.85-87.
203. Ibid., p.110.
204. Ibid., p.118.
205. H.R. Macmillan Export Company Annual Report, 1949, p.8.
206. H.R. MacMillan Export Company Annual Report, 1952, p.9.
207. MacMillan and Bloedel Annual Report, 1957, p.12.
208. MacMillan Bloedel and Powell River Company Annual Report, 1960, p.14.
209. MacMillan Bloedel & Powell River Company Annual Report, 1963, p.4.
210. MacMillan Bloedel & Powell River Company Annual Report, 1966, p.16.
211. MacMillan Bloedel & Powell River Annual Report, 1966, p.21.
212. MacMillan Bloedel Annual Report, 1973, p.4.
213. MacMillan Bloedel Annual Report, 1976, p.10.
214. MacMillan Bloedel Annual Report, 1979, p.2.
215. MacMillan Bloedel Annual Report, 1972, p.4.
216. B.C.F.P. Annual Report, 1968, p.5.
217. Schwindt, Table 11.39: "Major Innovations in Particleboard", p.141.

218. Figures derived from an analysis of Schwindt's data provided in : Schwindt, Table 11.40: "Breakdown of Research Expenditure Into Major Areas of Activity", p.145.
219. Porter, The Competitive Advantage of Nations, p.71.
220. Ibid., pp.51-52.
221. Ibid., p.52.

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APPENDIX 'A'

Figure A - 1

BCFP PRODUCTION TABLES 1960 - 1969

Year	Logs 100 Cu.Ft.	Lumber M FBM	Shingles Squares	Plywood M.Sq.Ft 1/16"	Market Pulp AD Tons	Stand Newsp. Tons
1960	376,500	265,000	118,600	556,000	184,400	-
1961	339,300	286,600	80,000	593,200	179,600	-
1962	424,000	279,800	88,100	618,800	188,400	-
1963	469,600	310,700	126,700	653,400	195,000	-
1964	539,300	374,000	109,000	664,000	193,000	44,600
1965	607,100	380,300	132,500	655,000	240,000	99,300
1966	612,200	393,000	146,400	666,700	299,200	119,200
1967	733,000	476,600	151,200	663,000	283,200	117,500
1968	876,600	505,000	145,400	667,900	255,900	165,500
1969	884,300	486,000	110,000	684,000	272,500	222,600

APPENDIX 'A'Figure A - 2MACMILLAN BLOEDEL PRODUCTION TABLES 1960 - 1969

Year	Newsprt. S.Tons	Market Pulp S.Tons	Kraft Paper S.Tons	Fine Paper S.Tons
1960	656,318	327,500	115,592	1,986
1961	643,576	333,932	120,971	5,194
1962	681,448	343,982	134,825	8,429
1963	689,296	368,152	159,635	12,089
1964	790,850	483,773	159,683	14,482
1965	843,968	556,135	173,018	17,868
1966	896,361	586,867	174,481	20,043
1967	832,361	550,245	178,382	20,801
1968	813,748	546,761	239,285	23,292
1969	927,868	556,468	455,654	24,331

APPENDIX 'A'Figure A - 2 (continued)MACMILLAN BLOEDEL PRODUCTION TABLES 1960-1969

Year	Logs M Cu.Ft.	Lumber M FBM	Plywood M Sq.Ft. 3/8"	Corr. Cont. M Sq.Ft.	Shingles Squares
1960	170,603	699,463	299,335	624,897	385,841
1961	171,715	707,792	347,523	606,697	413,565
1962	194,519	744,024	356,974	669,523	385,423
1963	206,206	804,102	372,054	665,240	449,323
1964	215,512	915,206	374,036	679,291	452,002
1965	238,900	1,014,757	386,457	699,881	470,983
1966	273,425	1,037,806	406,271	1,057,038	430,852
1967	274,677	1,139,437	416,664	1,454,032	443,816
1968	310,003	1,279,284	477,728	1,473,760	469,598
1969	359,924	1,244,260	534,950	1,607,996	449,837

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