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# The Impact of Railways on the World

MGT 2917

Canadian Business History

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This reading was prepared by Professor Joe Martin to supplement the class discussion on The Creation of the CNR case.

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# The Impact of Railways on the World

Railroads first appeared in the United Kingdom in the early 19th Century. This new transportation technology turned out to be revolutionary in more than one sense. Railroads not only reduced travel time for individuals and dramatically cut the costs of shipped goods, they also contributed to the creation of modern capitalism and even led to the acceptance of standardized time.

Simply put, the demands for capital were so great (“about \$36,000 a mile on average at a time when \$1,000 a year was a middle class income”)<sup>1</sup> old ways of providing capital, usually from wholesale merchants, were no longer sufficient. As for the standardization of time, a uniquely Canadian contribution,<sup>2</sup> railway travel spanning thousands of miles and several time zones (as was the case in Canada) required that time be synchronized on a more widespread standard basis, rather than varying from city to city, as had been the case prior to the adoption of Standard Time.

As the Edinburgh *Scotsman* foresaw in 1824, “When the steam-coach is brought fully into use, there is nothing very extravagant in expecting to see the present extreme rate of travelling (ten miles per hour) doubled. ... It would be rash to say that even a higher velocity than 20 miles an hour may be applicable. Such a new power of locomotion cannot be introduced without working a vast change in society. ... Commodities, inventions, discoveries, opinions, would circulate with a rapidity hitherto unknown, and the intercourse of man with man, nation with nation, would be prodigiously increased.”<sup>3</sup>

In the early 19th Century creative minds came up with the idea of applying steam power to railways, which, up till then, had been powered by horses. In 1825 the first public railway to use steam locomotion regularly to haul goods, principally coal, and later passengers, was inaugurated. The railway ran from Stockton to Darlington in the United Kingdom, the heartland of the First Industrial Revolution and the centre of the British Empire, the most powerful Empire the World had seen to date. Five years later, in 1830, the Manchester and Liverpool line opened, connecting England’s industrial centre with one of its major ports.

Like all revolutionary technologies, however, the railroad was not a single invention but rather a brilliant idea incorporating many variations. The peak year for construction in Great Britain was 1847 when more than 250,000 men built nearly 6,500 miles of track and another 50,000 were engaged in operating the railroads. Thus the railroad industry accounted for 2.5% of the entire work force. In 1847 alone total railway expenditure exceeded £52 million, which was not far short of the declared value of U.K. domestic exports and approached a tenth of the national income. In the years 1847-49, an average of nearly 1,000 miles of new railway line were opened annually.<sup>4</sup>

This new technology quickly crossed the Atlantic Ocean. So turning for the Baltimore and Ohio (B & O) took place in 1828 with service beginning in the early 1830s. The next 30 years were marked by the growth of many lines in the Northeastern and Midwestern United States involving a large number of very small companies.

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<sup>1</sup> p. 149, “An Empire of Wealth” by John Steele Gordon

<sup>2</sup> Sir Sandford Fleming, Canada’s foremost surveyor and construction engineer, was instrumental in convening an International Prime Meridian Conference in Washington in 1884, when the modern system of international standard time was adopted.

<sup>3</sup> As quoted in *The Economist’s* Millenium issue.

<sup>4</sup> pp 232-233 of *British Economic Growth, 1688-1959* by Phyllis Deane & W.A. Cole

The period following the American Civil War in the 1860s is known as the railroad age. It was marked by a huge expansion in rail services as well as consolidation within the industry. And it marked a period when the involvement of government in the business of both regulating and financing railroads got serious. The building of transcontinentals, most notably the Union and Central Pacific, took place during this time, with governments providing these and other companies with generous support both in terms of federal government loans and grants of huge tracts of land. In addition state and local governments granted tax exemptions, bought stock and contributed outright financial gifts. After supporting the railroads generously, first the state governments and later (1887) the U.S. federal government decided to regulate the railroads, primarily, but not exclusively on the matter of rates.

The railway phenomenon was not restricted to the United Kingdom and North America. In the 1830s steam railways were operating in Germany, Austria, and Russia. In Asia the Great Indian Peninsular Railway opened in 1853, running 21 miles out of Bombay. In the 1870s, railways began operating in Japan and China. The Trans Siberian Railway in Imperial Russia was the longest railway in the world – nearly 5,400 miles.

By the end of the 19th Century this new technology had transformed transportation forever, becoming the primary form of transport for both people and freight. When the first Dow Jones Industrial Average was created on July 3, 1884, nine of the 11 stocks were railways. In the next three revisions, prior to the introduction of the Industrial list on May 26, 1896, railways represented a minimum of 75% of the stocks on the list. Railways were perceived as being the heartbeat of society and this was no less true in Canada than it was elsewhere in the world.

## **Impact of Railways on Canada**

The first railway in Canada, opened for traffic in the 1830s, was a wooden tramway in Quebec that ran for 17 miles from Laprairie to Saint Jean. The railway was built, as so many were in the early years, as part of an attempt to combine water and rail traffic between the Hudson and Richelieu rivers. (It was not an auspicious beginning. That first winter the wooden rails were torn up by the elements. After that, the crews used metal.)

In July 1836, the Champlain and St. Lawrence Railroad (C&SLR), backed by John Molson and other Montreal merchants, was opened. It was pulled at first by horses because the engineer could not get the English-built engine to work. The problem was that Canada's tough climate needed tougher engines. In fact Canada ended up using American built engines, often with American know-how, because American engines could handle the severe Canadian weather conditions better than the British ones.<sup>5</sup>

As it did within the United Kingdom and the United States, Canada's railroad industry began as a highly fragmented system with hundreds of railway charters granted before consolidating into a few large corporations in the 1880s. In the Province of Ontario alone some 520 Acts of incorporation received approval prior to 1891.

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<sup>5</sup> Originally Canadian railways used the unusual gauge of 5', 6" between rails rather than the standard American 4' 8.5". Presumably this was a defence measure for protection against American invasion. In 1860, however, Canadian railways converted to the standard gauge with the exception of a few narrow gauge railways.

An early example of a bold and imaginative railway venture was the St. Lawrence and Atlantic Railroad. Built in 1853, it ran from Montreal to Portland, Maine, and provided Montreal with year-round access to an ice-free port. The principal Canadian supporter of the road was Alexander Tilloch Galt,<sup>6</sup> an employee of the British American Land Company and member of the legislature. Galt was able to use his positions to obtain financing through state subsidies and bond guarantees for British investors.

But according to the *Canadian Encyclopedia*, it was the Guarantee Act, passed in 1849, which not only ensured the completion of the St. Lawrence Railway but also of other railways that followed. Under this Act, (sponsored by Francis Hincks,<sup>7</sup> a friend of Galt's) interest was guaranteed of not more than 6% on half the bonds of a railway longer than 75 miles.

The 1850s also saw the inaugural run of the Great Western Railway from Niagara Falls to Windsor. Another good example of a judicious blending of public and private investment, this line was built primarily to carry traffic between New York state and Michigan. In an attempt to control the Ontario market, Montreal business interests countered by building the Grand Trunk Railway (GTR) line from Montreal to Sarnia. It was the most ambitious pre-Confederation railway project and was, by the time of its completion in 1860, the longest rail line in the world. But ruinous competition with each other forced the two companies, Great Western and GTR, into a merger in 1882 in order to compete with American rivals also engaged in consolidation.

As in the United States, therefore, the various railways in Canada were assisted by public sector cash grants, guaranteed interest, land grants, rebates and rights of way. The whole relationship between government and business went even further in Canada when the Fathers of Confederation met in Quebec City in 1864 and agreed to the articles of Confederation.

At the Quebec City Conference, the Maritime delegates demanded and received assurance that an all-Canadian railroad would be built to link the Maritimes and Canada. This promise was included as an article of Confederation,<sup>8</sup> an important consideration in the debates leading to the acceptance of Confederation.

From its very beginnings as a nation, therefore, the Government of Canada was committed not simply to providing financial assistance to railways, but also to owning and operating an all-Canadian railway that linked various parts of Canada. Since the decision to build the Intercolonial was primarily a politically strategic decision (for defence purpose the route ran as far away from the American border as possible) the Railway did not take into account mundane decisions such as traffic. Not surprisingly, these conditions led inevitably to operating decisions based on politics and patronage.

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<sup>6</sup> Galt became a Father of Confederation in 1867 and served as Canada's first Minister of Finance.

<sup>7</sup> Hincks would become Canada's third Minister of Finance and the Minister responsible for the first Bank Act.

<sup>8</sup> Resolution 68 reads "The General Government shall secure, without delay, the completion of the Intercolonial Railway from Rivière-du-loup through New Brunswick to Truro in Nova Scotia." The *quid pro quo* was contained in Resolution 69 "The communications with the North-Western Territory (Rupert's Land), and the improvements required for the development of the trade of the Great West with the seaboard, are regarded by this conference as subjects of the highest importance to the federated provinces, and shall be prosecuted at the earliest possible period that the state of the finances will permit."

## The CPR – the National Dream

The creation and development of Canada's other railway system, the Canadian Pacific Railway, was another story altogether. By the time Borden was making his fateful decision, the CPR – Canada's corporate private sector giant – had a much better balance sheet, little debt, and a financial future that seemed much more assured.

Construction of the CPR is not only the most popular and best known Canadian history story (thanks to the late popular historian Pierre Berton, author of *The National Dream* and *The Last Spike*, both of which became films as well) it is one of the better known railway stories in the world.

The decision to link the Atlantic and Pacific oceans by rail was at the very heart of the early policy of the new Dominion of Canada. A logical extension of the policy led to the construction of the Intercolonial Railway joining the Maritime Provinces to Central Canada, as articulated in Article 69 of the Quebec City resolutions.

Two years after Canada came into existence in 1867, the young country had made the largest real estate transaction in history in buying Rupert's Land – a vast parcel of land – from the Hudson's Bay Company. This government purchase was aimed at allaying the concerns of the Ontario members of Parliament about the exodus of Ontario citizens to the United States. These legislators also viewed the settlement of the western prairies as a useful solution.

A major obstacle to prairie settlement was, of course, the Canadian Shield. As early as 1870 Louis Riel had forced Canada to accept a fifth province, the postage-stamp sized Manitoba. That same year, more than a thousand miles to the west in Victoria – the capital of the recently merged colony of British Columbia – the Legislative Council was debating the future of B.C. The Council authorized that a delegation be sent to Ottawa that year. There the delegation concluded a deal whereby British Columbia would join Confederation on the condition of the construction of a transcontinental railway, to be begun within two years and completed within ten.<sup>9</sup>

In 1871, British Columbia joined Confederation as the sixth province, at the same time as surveys began for the railroad under the direction of Sandford Fleming. The railway start-up was not without incident, however. Despite scandals involving top railway syndicate officials, changes of government at the federal level, and a failure by the private sector to pony up extra cash (even with substantial government subsidies, not to mention other calamities including loss of life and limb,) construction of the railway began.

On October 21, 1880, the contract was signed and the Act that created the company was passed on February 16 of the following year. It officially incorporated the Canadian Pacific Railway Company, otherwise known as the CPR. The next four years saw one of the most incredible construction projects in the history of the world. (In 1883, a record six miles of track was laid in one day.) Simultaneously, the company was burning through cash. In spite of CPR President George Stephen's skill at raising money,<sup>10</sup> by March of 1885 Stephen was in despair.

Then, as so often happens in business as in life, the unexpected occurred. In this case it was Louis Riel's second uprising in Western Canada. Because the CPR was crucial in moving armed forces from Central Canada to the Prairies, the railway was suddenly seen as the saviour of the nation and government funds flowed freely once more.<sup>11</sup>

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<sup>9</sup> Actually completed 14 years after B.C. joined Confederation.

<sup>10</sup> Prior to becoming President of the Railway he had been President of the Bank of Montreal

<sup>11</sup> In November, 1885, within one week the last spike was driven for the CPR and Louis Riel was hanged.

Out of sheer necessity, the CPR had been operating with close attention to cost control, accounting procedures and efficiency. This, along with the reinstated government financing, led to improved financial stability. By the late 1890s, diversification into steamship service to the Orient and later to Europe further improved the company's financial picture as did its entry into the hotel and resort business in Banff and Lake Louise. The company diversified further at the end of the century with the acquisition of a large smelter in BC, the basis of Consolidated Mining and Smelting Company (COMINCO).

As the company entered the 20th Century and settlement on the prairies boomed along with wheat exports, the once financially-threatened company emerged as one of Canada's corporate giants. Early in the new century, the CPR owned nearly 10,000 miles of track, one half of the Canadian total, with an excellent main line running from Saint John, New Brunswick (through Maine) on the east coast, to Vancouver on the west coast, plus excellent feeder lines throughout the transcontinental system. Company receipts were approaching \$50 million, split 60/40 between freight and passenger. And both the profit and loss statement and the balance sheet of the CPR were sound, with little debt.