

March 2013: Executive Summary Report

Seizing the Continent: Opportunities for a North American Gateway



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FOREWORD

CANADA'S ROLE AS A North American gateway to Asia is almost as old as Confederation. The transcontinental railway that made Canada from "sea to sea" was as much about facilitating trade between Asia and Europe as it was about a "national dream." George Stephen, the president of Canadian Pacific Railway wrote to Prime Minister John A MacDonal in 1885 with the view that "the Canadian Pacific is not completed until we have an ocean connection with Japan and China." When the ocean connection was made, trans-Pacific trade flourished and Canada became an important transportation route for the shipment of silk, tea, oranges, and Royal Mail.

In the many decades that followed, Canada's west coast ports diminished in importance, due in part to changes in transportation technology, the shortening of sea routes, shifts in economic power and global manufacturing, and war. It was not until the beginning of this century that Canada's role as a North American gateway was rediscovered, largely because of the massive expansion of trade between Asia and North America. Congestion in US ports provided an opportunity for Canadian facilities to capture market share, building on the long-recognized geographic advantage of Canada's proximity to key Asian ports. This effort took flight in 2005 when Ottawa and the BC government launched the first of its Asia Pacific gateway initiatives, which led to the expansion of port (and airport) capacity, improvements in road and rail infrastructure, and the streamlining of customs and regulatory procedures for the movement of goods and people.

The Asia Pacific Gateway and Corridors Initiative (APCGI) has already resulted in a significant increase in container traffic through west coast ports, and has firmly established Canada as a serious alternative for shipments from Asia to the United States. Even so, Canada's market share of Asia-North American container traffic is around five percent only, and there is much potential for Canadian ports – on both coasts – to capture a larger slice of the market.

I am delighted therefore by the release of *Seizing the Continent – The Great North American Gateway*, prepared by George Stalk, Senior Fellow at the Foundation and Senior Advisor of The Boston Consulting Group; and Dr. Charles McMillan, Professor of International Business at York University and a former director of the Foundation. The authors believe that the huge growth potential of Canada's North American Gateway will depend on key players in industry and government working together to develop a collaborative business model to increase efficiencies across the entire supply chain.

FOREWORD (cont.)

As Canada places more attention on economic ties with Asia, one of the immediate opportunities for Canadian industry will be in the area of transportation, logistics, and supply-chain related services. Building a North American Gateway with deep collaboration among stakeholders, as proposed by the authors, will be an important step in realizing these opportunities.

The Asia Pacific Foundation of Canada has had a long history of involvement in Asia Pacific gateway research and convening, going back to the Asia Pacific Trade and Transportation Forum and the creation of the Greater Vancouver Gateway Council in the early 90s – which led to the current APCGI. This latest contribution by Stalk and McMillan is an important advance in thinking on the importance of the gateway, not just for the west coast but for all of Canada. I commend the authors on the report and look forward to working with them to advance their ideas.

Sincerely,



Yuen Pau WOO

President and CEO

Asia Pacific Foundation of Canada

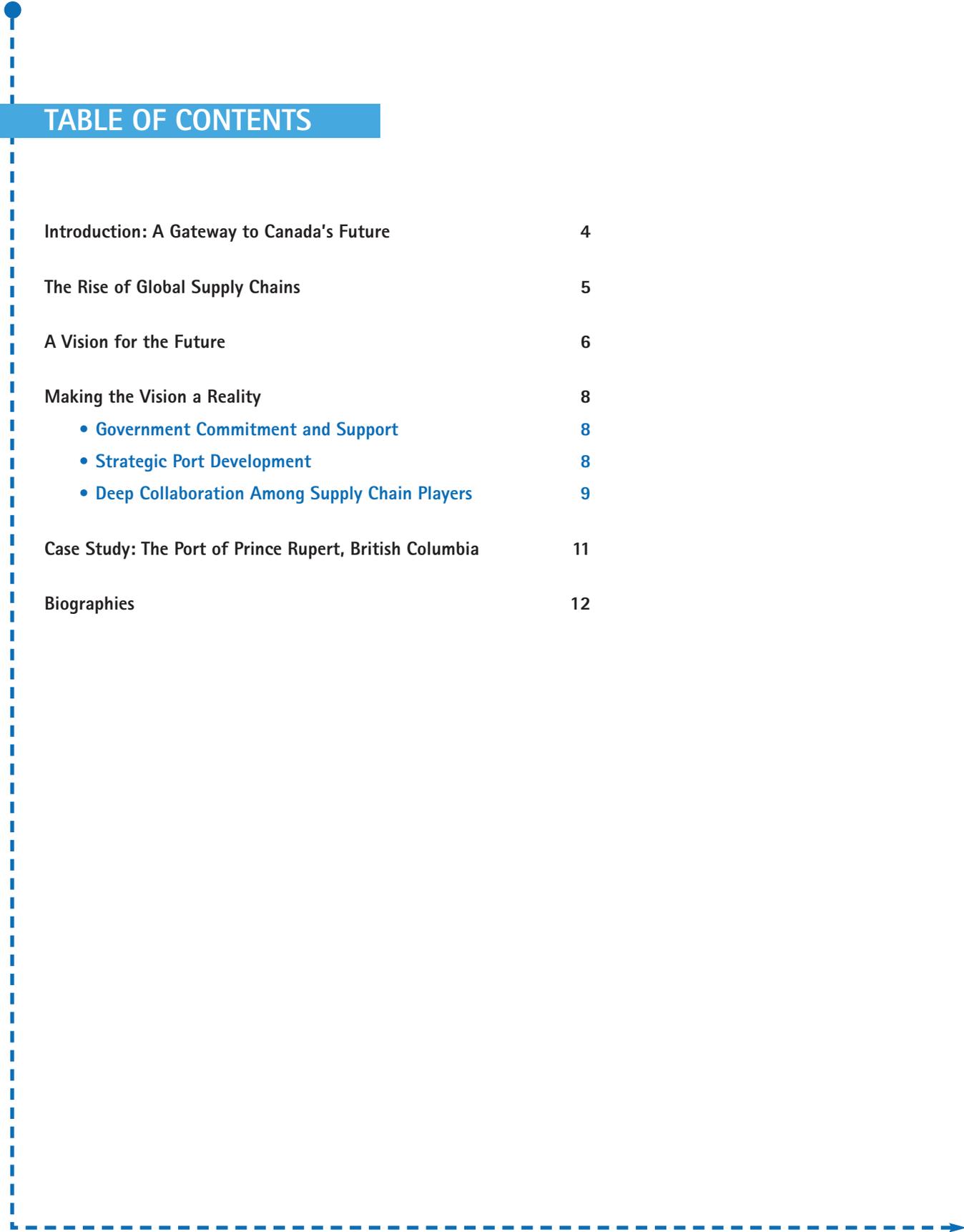


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Introduction: A Gateway to Canada's Future

THE EXPLOSION OF IMPORTED GOODS from China, India, and other Asian economies is leading to serious congestion in the ports, rails and roads of North America. For companies that rely on surface logistics, these supply chain bottlenecks are beginning to derail production schedules and slow the restocking of retail shelves. In short, Asian imports are increasing faster than our ability to transport them.

The solution to this growing problem may lie with Canada's own transportation infrastructure. With access to three oceans, a national rail system, and proximity to the large, dynamic markets of the United States, Canada is uniquely positioned to become a gateway from Asia and Europe to the markets of North America. The potential impact of meeting this challenge cannot be overstated. Like our cross-country railways, the St. Lawrence Seaway, and the Auto Pact, this is truly a nation-building opportunity to shape our country's future.

Today, over 90 percent of international trade in tons is ocean-borne. Reflecting the impact of globalization, the volume of containers shipped to the west coast ports of Los Angeles, Long Beach, Seattle and Vancouver has grown tenfold in the last 40 years, from 2 million to 20 million TEUs (a measure of cargo capacity). The increasing strain on capacity can be seen at the world's container ports, on the railroads that move goods inland, and on highways strangled by traffic. Although the lingering effects of the global recession have dampened demand and masked this growing congestion, many industry insiders believe we'll reach a crisis point in 2015 – if not sooner.

The United States is not in a position to substantially build on its current leadership position in transportation. U.S. spending on logistics infrastructure is constrained by budget shortfalls,

environmental concerns, and political gridlock. But even without these obstacles, U.S. ports and railroads have limited expansion potential given their city-locked locations. Canada now has an unprecedented opportunity to take on a leadership role in global trade.

Through a series of detailed interviews across Canada with 80 leading corporate executives, senior government officials, academics, port and airport officials, and a few former senior politicians, we discovered a broad consensus on the economic value of this unique opportunity – and the need to move forward. This progress report presents our current assessment of the North American Gateway opportunity, based on our analysis of a range of data and materials, including government reports, transportation studies, academic research, and white papers on the topics of ports, gateways, and supply chains. We also explore the factors that are critical to Canada's ability to capitalize on this opportunity.

The North American Gateway requires a compelling vision, strong industry champions, and public support from Canada's government, politicians, unions, and citizens. We can take on this pivotal role in the global economy – and gain enormous economic benefits – if our government and business leaders make it a priority.

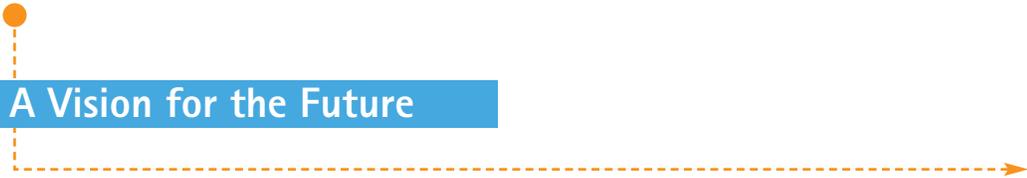
The Rise of Global Supply Chains

THE PULSE OF THE GLOBAL ECONOMY has shifted dramatically away from the Western markets of Europe and North America to Asia, which now accounts for a third of world trade. China's trade alone is growing at 20 to 25 per cent a year. Today, seaborne traffic accounts for about 90 per cent of international trade, and the volume of global shipping has increased 7 percent per year on average since 2011. For the growing number of Canadian companies that import and export goods, this presents a critical challenge: the need to manage complex global supply chains that involve trans-oceanic transport, inland transit abroad and in North America, and various transportation modes in between, from trucking to rail to barges that can navigate the Suez or Panama Canal.

Global supply chains allow companies to transport goods from production facilities abroad to plants, warehouses, and stores in far-flung consumer markets. In Japan, global manufacturers such as Toyota locate their factories and assembly plants adjacent to deep-water ports, where the per-auto cost of shipping from, say, Nagoya to the port of London is cheaper than transport by truck or railway from factories located within Britain to the port of London. Similarly, the oil industry uses global supply chains to connect the source of oil production in one part of the world to refineries in different countries to service stations in different consumer markets. These global logistics extend to the retail sector and companies like Canadian Tire, Hudson's Bay Co., Sobeys, Home Depot and Ikea.

By their nature, global supply chains require physical infrastructure—ports, seaways, railways and highways. Consider a range of recent developments:

- New rail services (two trains per day) linking Long Beach, CA to Atlanta, GA to help ease congestion on the West Coast of North America
 - The development of new ocean ports in India for the shipment of manufactured goods like steel, textiles, and autos to not only Asian markets, but eventually to North America via the Suez Canal
- New combinations of ocean shipping and air cargo transport to shorten the round-trip trans-Pacific shipping time from Shanghai to Chicago via West coast ports from Prince Rupert 18.7 days, Vancouver 23.6, and LA/Long Beach 19.3
- Global trade increases the logistical challenges for Canadian companies. Moreover, some of their imported goods are destined for the U.S. interior, especially to Chicago-area manufacturing and retailing hubs extending throughout central North American. In the past, the cheapest routes were through the West coast from China, South Korea and Japan. But there is a growing demand for state-of-the-art shipping into the Atlantic coast ports of North America such as Montreal, Halifax and Saint John.
- Enlargement of the Panama Canal to receive post-Panamax ships of up to 15,000 TEUs planned over the next 20 years



A Vision for the Future

THE CORE CONCEPT OF A North American Gateway is straightforward: a set of Canadian ports serving as entry points for containerized cargo from Asia and Europe, connected to Canada's transportation infrastructure to ensure fast, efficient, reliable and cost-effective delivery to all of central North America. Entry points for the gateway would be the ports and terminal operations in Vancouver and Prince Rupert on the West Coast, and of Halifax and Montreal on the East Coast. CN and CP rail links connect the port terminals to central Canada and the central United States.

Canada is well-positioned to play an expanded transportation role in the global economy. Its West and East Coast ports are closer to Asia and Europe, respectively, than any U.S. ports, can expand their capacity as demand increases, and have rail connections to inland markets. These advantages — location, capacity, and rail connections — are powerful differentiators.

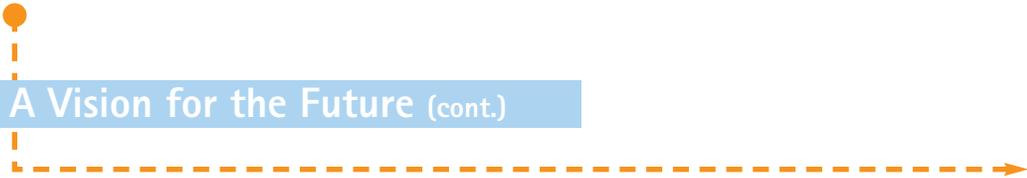
Canada is unique in North America, with two railroads running east-west that have excellent links to port and terminal infrastructure. Canada has 48,068 kilometres of railways, with two Class 1 carriers, CN and CP, owning or leasing some 35,200 kilometres of track. Both CP and CN have major U.S. customers, strategic partnerships with U.S. railroads, and easy access to U.S. ports. Indeed, CN, the leading first-tier railway among the six in North America, has a track system that extends from Halifax in the east to Prince Rupert in the west, to Chicago, Memphis and the Gulf of Mexico in the south. CN serves the ports of Vancouver and Prince Rupert in British Columbia, Montreal and Halifax in the east, and Buffalo, Chicago, Detroit,

Duluth, Minneapolis, Green Bay, Memphis, St. Louis, and Jackson in the U.S.

With strategic expansion, Canada's East and West Coast ports would be desirable entry points for containerized cargo from Europe and Asia. Cargo could be unloaded with competitive dwell times and transferred to our national rail system, which would transport the goods to U.S. and Canadian markets — all in a fast, efficient, and cost-effective manner if we invested in state-of-the-art scheduling, logistics, and communication systems. These systems would improve supply chain performance, increase operating profits, and attract a growing volume of business through superior connectivity.

North American in- and outbound containers for both coasts totaled about 46.3 million TEUs in 2010, with Canadian containers accounting for more than 10 percent of this amount. If the North America Gateway is competitive enough and the flow of containers is diverted from the U.S. West Coast through Canada, boosting traffic to domestic ports by 5 percent, Canada would see an increase of about a million containers per year at constant total North American container volumes. The U.S. would experience a 3 percent decline in total volume.

We believe the North American Gateway could readily take 10 percent of the volume from U.S. ports, even in the lingering recession, which would result in a 50 percent increase in container volumes through Canadian ports. The U.S. ports would then lose 6 percent of their volume — the number at which the United States would likely take protectionist action.



A Vision for the Future (cont.)

Although achieving this vision will take coordinated action on a number of fronts, Canada already has the beginning of an Asia-to-North America gateway in the port of Prince Rupert (PPR). (See *Case Study: Prince Rupert, British Columbia*.)

Located northwest of Vancouver, PPR is closer to Asia than any other major West coast port by about 2,000 miles (or 3 days transport time), and moves a growing number of containers from Asia to central North America, particularly to the United States. PPR was the only container port on the continent to grow during the Great Recession of 2008. The port has created 2,300 full-time jobs – an increase of 920 jobs in the last two years alone. Impact studies show that port-related jobs generate wages of almost \$130 million in British Columbia, add more than \$290 million to the province's GDP, and spur another \$550 million in economic output.

Similarly, studies on the impact of higher container volume on Canada's four leading ports show that the North American Gateway would deliver a range of important benefits. It would create highly paid, meaningful jobs; reduce consumer prices by sharply increasing the flow of lowest cost goods; optimize existing port and rail capacity; and build wealth and market share for investors. But the Gateway would also deliver important secondary advantages: a more global outlook among Canadian companies; an ability to capitalize on the emerging economies of Asia; and more developed, value-adding physical and IT infrastructures.

Making the Vision a Reality

TO BECOME A NORTH AMERICAN gateway for global trade, Canada needs the capacity to handle bigger ships, an integrated technology platform for supply chain players, the ability to efficiently manage customs documentation and border inspection, and regular updates to border security. Three factors are critical to success: government commitment and support; strategic port development; and deep collaboration among supply chain players. Let's explore each of these more closely.

Government Commitment and Support

Over the last two decades, Canada's federal government has initiated funding for Canada's Atlantic and Pacific gateways, funded border security measures, and designed a Canada-U.S. border security policy. But continued leadership is required. Canadian governments must be catalysts for and champions of the North American Gateway, driving the vision forward with a national transportation strategy that links the Pacific and Atlantic ports and the St. Lawrence–Great Lakes corridor. Just as important, governments must make strategic but surprisingly limited investments in infrastructure, develop new policies that support related projects and funding, remove taxes and regulatory impediments that would hinder progress, expedite permits and approvals, and regularly update border security. Finally, federal and provincial departments of trade, transportation and industry must coordinate gateway initiatives.

Strategic Port Development

To become a North American Gateway for global trade, Canada needs the capacity to handle bigger ships, further investments in transportation infrastructure, and efficiency

measures to increase speed and efficiency. Specifically, key investments would include the following:

- Increased container handling capacity at Prince Rupert, beginning with cranes and then adding more docks and terminals
- Enhancements to rail capacity, especially in Western Canada
- Possible improvements to water depth at the Port of Montreal and the St. Lawrence approach to Montreal
- Improved city road bypasses in Halifax
- Mechanical automation at ports to increase throughput efficiency and reduce dwell times
- Infrastructure such as roads and rail spurs to remove possible bottlenecks at PPR and Vancouver

Much of this investment can be done with private capital or with public-private-partnerships (P3s).

The ports of Halifax and Vancouver can expand substantially without major disruptions. Prince Rupert would need to reach capacity of 5 million TEUs per year to achieve world-class size and capabilities. This development would present a number of challenges: costly topological changes to expand PPR's facilities (absent innovations in container handling); increased demand for rail transport that would bump up against current capacity; the need to attract a critical mass of shippers; potential collaboration with First Nations groups; and possible U.S. protectionism. These issues must be anticipated and addressed.

Deep Collaboration Among Supply Chain Players

Since efficient transport flow and fast cycle times offset fuel price increases, demand for a port's services is in part driven by efficient infrastructure. To optimize end-to-end efficiency and reduce costs, the Gateway will require deep collaboration among the port authorities, terminal operators, shippers, exporters, retailers, and other key players in the global supply chain, as well as communication links with the railways, truckers, freight forwarders, third-party logistics providers, and freight expeditors that provide inland transportation services.

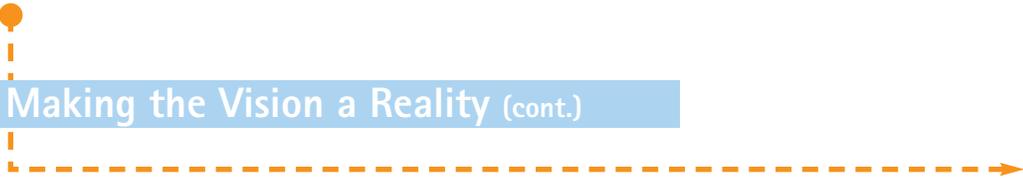
The greater good must trump individual corporate self-interest — a major hurdle. Performance metrics that are rigorously tracked, shared best practices, and integrated information systems with real-time data will sharply improve supply chain execution, but participants must invest in the tools and a shared collaboration platform to make it happen. The goal is for key players to act as one company when managing the global supply chain. This close collaboration is worth the effort: studies show that operating profits are about three times greater when an end-to-end supply chain is integrated. Time is money.

Unfortunately, although liner companies, retailers, exporters, terminal operators and other supply-chain players are attracted to Canadian ports and their railway access to central North America, the level of collaboration is extremely low. Various Canadian gateway initiatives, most notably the Pacific and Atlantic gateways, are nascent efforts to encourage greater collaboration among key elements of the local supply chain. But most groups are focused on increasing their own payback rather than seeking to optimize the end-to-end supply chain by lowering unit costs while increasing transport volume,

traffic throughput, and jobs. Addressing this problem may require some "shuttle diplomacy" behind the scenes and one or more summits to bring the players together.

Deep collaboration among Canada's supply chain players would lead to lower costs, greater reliability and faster deliveries—major competitive advantages that would sharply increase market share. Collaboration can be thought of as a hierarchy with four levels, ranging from none at all to highly advanced involving all participants in the global supply chain. As integration among supply chain participants increases, so does the potential for enhanced performance within and across the supply chain.

More specifically, at Level I, the simplest and most common, there is no collaboration, interactions are purely transactional, and a company keeps its suppliers and customers at "arm's length." At Level II, companies begin to share basic information. For instance, the demand and planning forecasts of a manufacturer become the operations plan of the supplier. Collaboration is sequential and linear. At Level III, collaboration starts to have real meaning. Companies share information on planning, demand, and inventory levels with not just their suppliers and customers, but with their suppliers' suppliers and their customers' customers. At this point, the effect of collaboration on supply chain performance starts to be significant. Finally, at Level IV, collaboration extends well beyond the domestic market to overseas plants, logistics service providers, and companies involved in shipping and transportation—the terminal operators, freight handlers, railroads, and truckers. Only a handful of companies have achieved anything close to this level of collaboration. Wal-Mart,



Making the Vision a Reality (cont.)

Canadian Tire and Li and Fung stand out. Most of today's participants are at Levels I and II, and a few approach Level III.

Level IV collaboration is the goal of the North American Gateway. Achieving this milestone will require developing a collaborative technology platform with the following core elements:

- ❑ A Canadian port, terminal operator, and a group of shippers, exporters, and retailers
- ❑ A powerful IT platform that all participants can access and share information with other members of their supply chain on a restricted basis
- ❑ Online analysis of tracking, placement, and connectivity data within the global supply chain
- ❑ Strong data processing capabilities to manage the high volume of information
- ❑ A trusted source of data storage. Data must be stored in a common location where it can be analyzed and processed
- ❑ Mechanisms that restrict access to unauthorized parties, since information is strategically critical
- ❑ A user interface that allows all participants to easily access and interact with the information

The corporate executives we interviewed across Canada showed great interest in a collaborative technology platform to reduce unpredictability and improve service, efficiency, and delivery speed. But any platform will have to meet certain conditions. For instance, no participant would have access to competitor data and planning tools. The government officials, port authorities, and terminal operators we interviewed also saw the advantages of a collaborative platform, but felt that private-sector companies should take the lead in developing it.

CASE STUDY: PRINCE RUPERT, BRITISH COLUMBIA

A realized vision of the North American Gateway already exists at the Port of Prince Rupert (PPR). Located northwest of Vancouver, PPR is the closest to Asia by some 2,000 miles compared to the larger ports on the U.S. West coast. A global supply chain made up of PPR, Maher Terminals, CN Rail and COSCO (China Overseas Shipping Company) is moving a growing number of containers from Asia to central North America, particularly the United States.

Blessed with one of the deepest natural harbours in the world and the deepest inner harbour entrance with a channel depth of 35 metres and terminal berths of 17 metres. PPR has the capacity to handle the largest vessels deployed in transpacific trade. It is North America's closest port to key Asian markets by up to three days.

PPR was established early in the 20th century and expanded during the Second World War as a staging port for the Allies' push to invade Japan. The invasion never occurred and the port lay essentially dormant for decades. Growing Asian trade with Canada, and rising exports to Japan and Asia, advanced plans for a Pacific Gateway in the 1990s, prompting the federal government to invest in PPR and a railroad to connect it to Canada's eastern provinces. PPR was conceived as a bulk port for lumber and coal shipments from Canada to Asia, particularly to Japan. Although still a bulk port, the envisioned volume of bulk movements never materialized.

About a decade ago, PPR's management, led by harbour commissioner Don Krusel, decided to transform the port from primarily a bulk port into a container port as well. The initial concept was to develop PPR as a feeder to the Port of Vancouver, but ambitions grew as the port formed relations with CN rail and Maher Terminals and sought to become a destination in itself. Maher entered into an agreement with Prince Rupert to help build a 500,000/year TEU terminal on the docks of what was then the Fairmont Terminal. This building was completed in the spring and summer of 2007 and operations began that fall, when a contract with COSCO was negotiated. PPR's first vessel docked on Oct. 31, 2007 and CN's first container train left the port on Nov. 1.

The early returns suggest that PPR is at least advantaged in time and possibly in cost:

SHANGHAI TO CHICAGO VIA PPR.	LA/LB.		VANCOUVER
Ocean transit times	10.6	13.1	15.0
Port dwell time	1.5	2.8	2.5
Rail time.	4.0	4.5	6.1
Total transit time.	11.9	20.4	23.6

Source: Transport Canada, Interviews, BCG estimates

Today, Prince Rupert is nearing its capacity of 500,000 TEUs as a container terminal. In 2012, plans began to increase the capacity of PPR to 2,000,000 TEUs per year, with 61 hectares and new capacity of 1.5 million TEUs. Financing and users are currently being solicited. A capacity of 2 million TEUs per year would place PPR right at the lower limit of what is needed to be a true destination serving a target market: central North America. We believe Prince Rupert/CN combination could and should ultimately handle 5 million TEUs per year.

BIORGRAPHY: CHARLES J. MCMILLAN

Charles J. McMillan, Professor of Strategic Management, York University, is the author of nine books related to international business and global management, including the Japanese Industrial System, published in English, Japanese, Malaysian and Russian editions, and his new book, *The Strategic Challenge: From Surfdom to Surfing in the Global Village*. He has written and lectured extensively on globalization in such prestigious academic journals as McGill Law Review, Academy of Management Journal, Journal of Business Strategy, Management, Canadian Public Policy, Ivey Business Journal, California Management Review, Policy Options, Canadian Public Administration, as well as in such publications as The New York Times, Nihon Keizai Shimbun, the Central Asia Post, Halifax Chronicle-Herald, The Globe and Mail, The National Post and The Toronto Star. In 2007, he was awarded a Fulbright Fellowship at Brandeis University, International Business School.

Active in public affairs and public policy, he has worked extensively with national and provincial governments across Canada, and served as Senior Policy Advisor to the Prime Minister of Canada. He is the author of *Focusing on the Future: The New Atlantic Revolution*, issued by the Council of Atlantic Premiers; and *The Atlantic Gateway and Canada's Trade Corridors*, available from the Asia Pacific Foundation of Canada. His latest book, published in the fall of 2007, now in a second printing, *Eminent Islanders*, received a Heritage Foundation of Prince Edward Island award on February 18, 2008.

BIORGRAPHY: GEORGE STALK

George Stalk is a Toronto-based senior advisor of The Boston Consulting Group. Since 2008, he also has been a BCG Fellow, which allows him to spend significant time developing thought leadership on a topic that will create value for the firm's clients. Outside of BCG, he serves as an adjunct professor of Strategic Management for the Rotman School of Management at the University of Toronto, is a Fellow at the Strategic Management Society and the Asia Pacific Foundation and is a member of the board of directors Intuitive Surgical, Inc.

George is the co-author of three best-selling books on time-based competition, *Competing Against Time*, *Kaisha: The Japanese Corporation* and *Hardball: Are You Playing to Play or Playing to Win*. His articles have been published by many leading publications including *Harvard Business Review*, where one of his features won the McKinsey Award for being the best of its year. He writes a monthly column for the *Globe and Mail* in Toronto and speaks regularly to business and industry groups. BusinessWeek identified him as one among a new generation of leading management gurus. Consulting magazine named him one of the industry's Top 25 most influential consultants in 2000, 2001 and 2002.

He holds a BS in engineering mechanics from the University of Michigan, an MS in aeronautics and astronautics from Massachusetts Institute of Technology and an MBA from Harvard Business School.

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