

Canadian Supply Chain Efficiency Smart Border Study



A Lean Logistics Technology Roadmap Initiative

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INTRODUCTION

The fallout from September 11, 2001 has resulted in a crisis for Canadian industries in moving goods across the border to the United States (U.S.). The Canadian and American governments needed to develop new approaches to meet challenges that resulted which in turn provided a unique opportunity to build a smart border for the 21st century. A border that securely facilitates the free flow of people and commerce and reflects the largest trading relationship in the world.

The study partners initiated this effort through the Lean Logistics Technology Roadmap (LLTRM) project; an industry-led partnership between Industry Canada and Supply Chain & Logistics Canada with the support of Transport Canada and the Ontario Government. The LLTRM aimed to assess technologies, innovations and conditions that have the greatest impact on the logistics sector and to develop an action plan for industry, academia and government.

One of the key findings from the LLTRM concluded that Canadian firms did not have the required information and tools to respond to the technological advancement of the new Smart Border initiatives.

The industry pointed out that Canadian firms taking part in North American just-in-time (JIT) and lean manufacturing supply chains will have to adopt those new technologies and processes in order to maintain their presence in specific supply chains.

With the study report, the industry players have the possibility to access the latest trends and evaluate the impact, opportunity and barriers for their organization. On a second note, they also have the possibility to benchmark themselves with their competitors, other key sectors, supply chain partners as well as with different size of firms organizations, making this report a dynamic tool for the survey participants.

The sponsors and authors are grateful for the assistance of the firms and individuals who participated in the survey, in the review of the document and contributed to the project as a whole.

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IMPORTANCE OF SMART BORDER

As the world becomes more global and trade continues to flow freely between countries, it becomes more important to develop initiatives that protect countries and facilitate trade. Specifically, the importance grows when we look at Canada and the United States. These two countries share one of the busiest borders in the world.

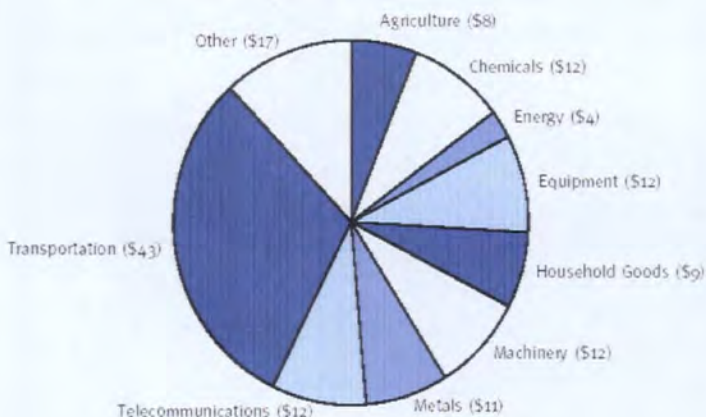
- There are 130 land-border points on the Canada-United States border
- 52% of trade with US is trucked through four Ontario border points (Queenston, Fort Erie, Sarnia, Windsor)
- 7,000 trucks a day cross Ambassador Bridge between Windsor and Detroit (one truck every minute in each direction)
- One truck crosses the Canada-US border every 2.5 seconds (representing 45,000 trucks)
- Rail's share of the total volume of merchandise is 44%

Canada and the U.S. have the world's largest and most comprehensive trading relationship. No two countries trade as much on an annual or daily basis.

- Approximately US \$475 billion of goods cross each year
- Almost US\$1,3 billion of two-way trade crosses the border every day
- 86% of Canada's merchandise exports are destined to the United States
- The Canadian market takes 25% of America's exports of goods

Chart 1:

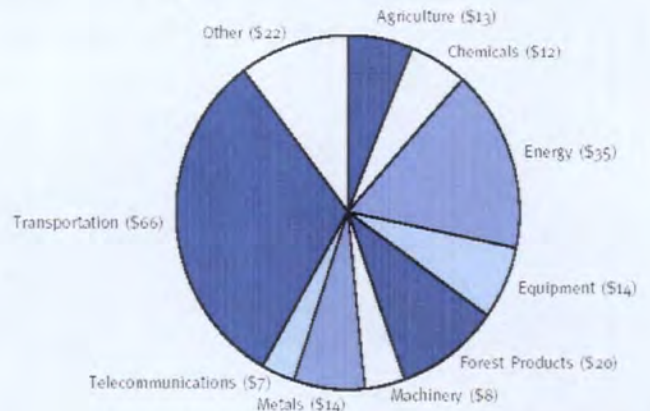
U.S. Exports of Goods to Canada
2001, in billions of U.S. dollars



Source: Statistics Canada

Chart 2:

U.S. Imports of Goods from Canada
2001, in billions of U.S. dollars



Source: Statistics Canada

Impact of Border Compliance

According to the study, border delays have had an impact on delivery times. Only 18% reported that they were not being affected by border delays versus 82% who have experienced increased wait times and thus increased their delivery times.

Almost 60% of the respondents indicated that it is currently taking from one to eight hours longer to cross the border than before. If your customer is operating on a JIT system, this length of delay could have serious implications. Based on the principal of items moving through the supply chain as and when they are needed, it would prove to be invaluable to reduce the time to cross the border. The more that can be done in advance, the more efficiently your business will operate.

Chart A: Are Your Goods taking Longer to Cross the Border?

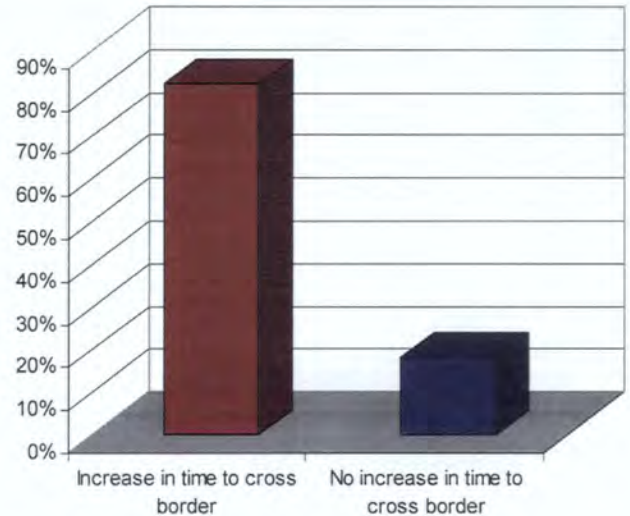
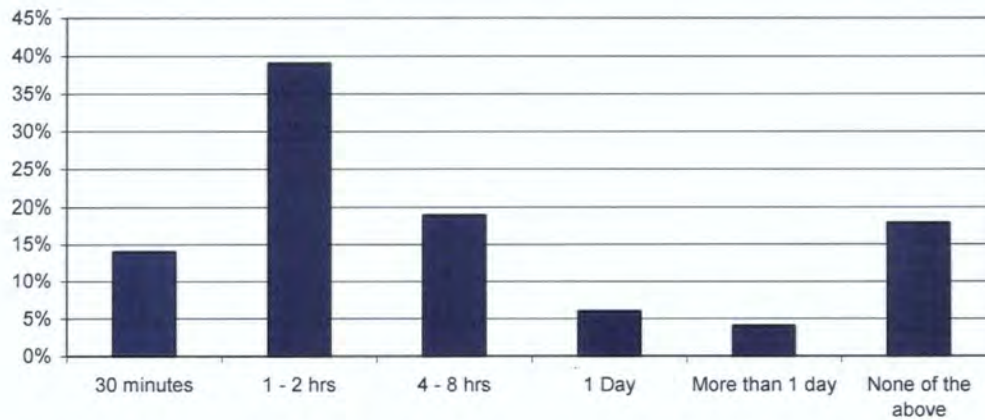


Chart B: How Much Longer Are Your Goods Taking to Cross the Border?



Not only does a company have to meet their customer's needs but also they cannot afford unplanned delays at the border because of hours of service and the availability of drivers. If a shipment takes too long then they may not be able to make their next commitment because no drivers or trucks will be free.

Time is not the only impact of border delays, a company's financials will also feel the strain of wasted time at customs. 61% experienced a financial impact because of border delays. 39% of respondents spend between \$100 and \$ 1000 more as a result of delays per day.

Chart C: Additional Costs per Day due to Border Delays

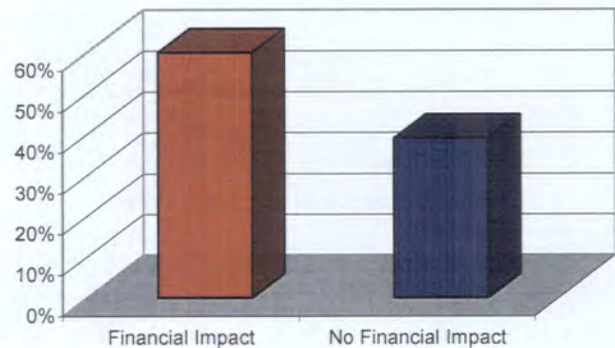
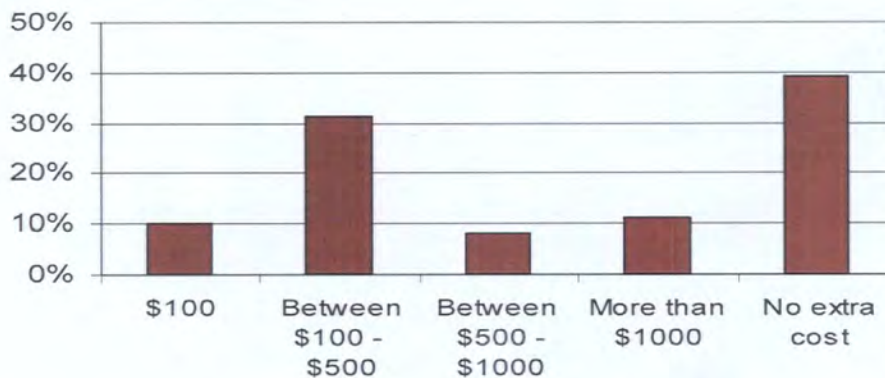


Chart D: Additional cost / day Canadian companies are paying due to increased border delays



The payoff of becoming border compliant will not only be a reduction in costs but customer service will improve. Eventually as border compliance systems advance further and government policy catches up, electronic filing of shipment information with customs will become mandatory. Many larger customers already expect (and/or require) that their suppliers are compliant. This could translate to an increase in market share for certified companies in the supply chain.

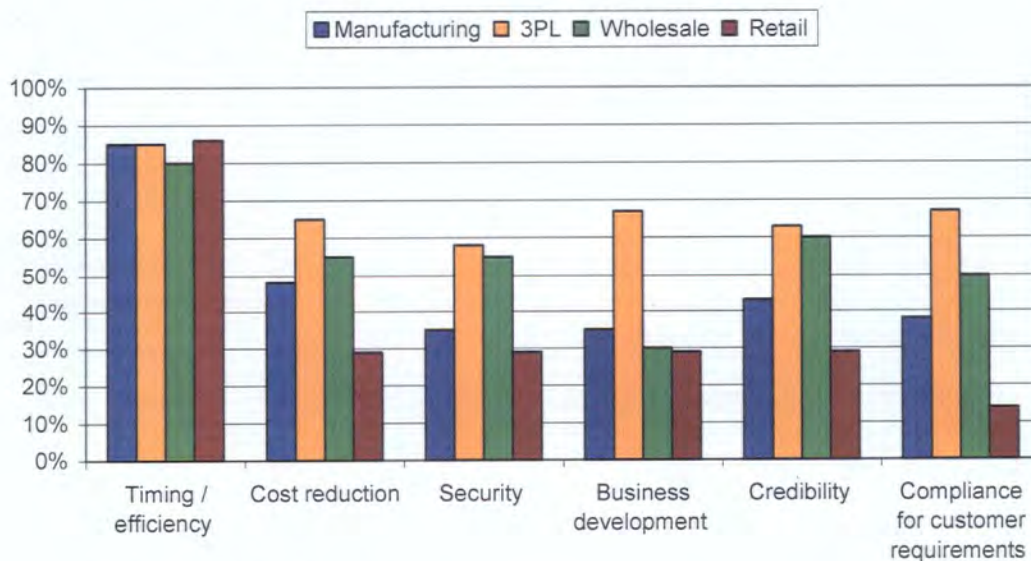
Benefits and Barriers

What are the benefits of being certified?

- Secure your supply chain
- Reduce the number of border inspections
- Minimize border clearance times
- Protect your company's name and reputation
- Reduce the cost of compliance with customs requirements
- Maintain a strong and ongoing partnership with Canadian and U.S. Customs
- Identify other certified partners that you can do business

With the increasingly competitive business landscape, it has become a strategic necessity to optimize a company's supply chain in a fashion that leverages the potential of trade. The top three benefits identified to become border compliant are: timing/efficiency at 88%, cost reduction at 59% and credibility at 49%, (See Chart E). These three benefits fit together well; a missed opportunity to deliver is a lost opportunity of another load thereby decreasing timing, efficiency, increasing costs and creating a loss of credibility when the shipment does not arrive on time. These results hold true by sector as well which can be seen in the following chart:

Chart E: Primary Benefits of Border Compliance



* 3PL: Third Party Logistics

Some of the specific impacts of the primary benefits are:

Timing/efficiency: The biggest benefit of border compliance is to achieve predictable shipments and efficiency across the entire supply chain.

The different programs enable all firms to implement improved JIT and lean practices. Shippers, customers and carriers benefit greatly by collaboration within the supply chain.

A second benefit of predictable timing and efficiency is the maximization of hours of service of drivers. With the new hours of service regulations in place, shippers and carriers are faced with limited resources. Unpredictable shipping times affect the ability to efficiently allocate human resources.

Cost Reduction: Missing a delivery window in a JIT / lean process requirement can have a major financial implication for assembly plants because it interrupts the whole production line.

A return shipment could also miss its delivery window due to this type of delay. Certification and fast lane processes will reduce these inherent costs. Technological requirements will also have an impact on global documentation costs due to file automation and enhanced data integrity. General transport and inventory costs will also be reduced via an optimized system resulting from the certification process.

Security: Currently, supply chain partners are looking at a reduction in loss / damage product rate, providing supply chain visibility and increased control levels. Though security levels will differ between industries, a certified security process is always an important consideration for shippers, carriers and customers when selecting partners.

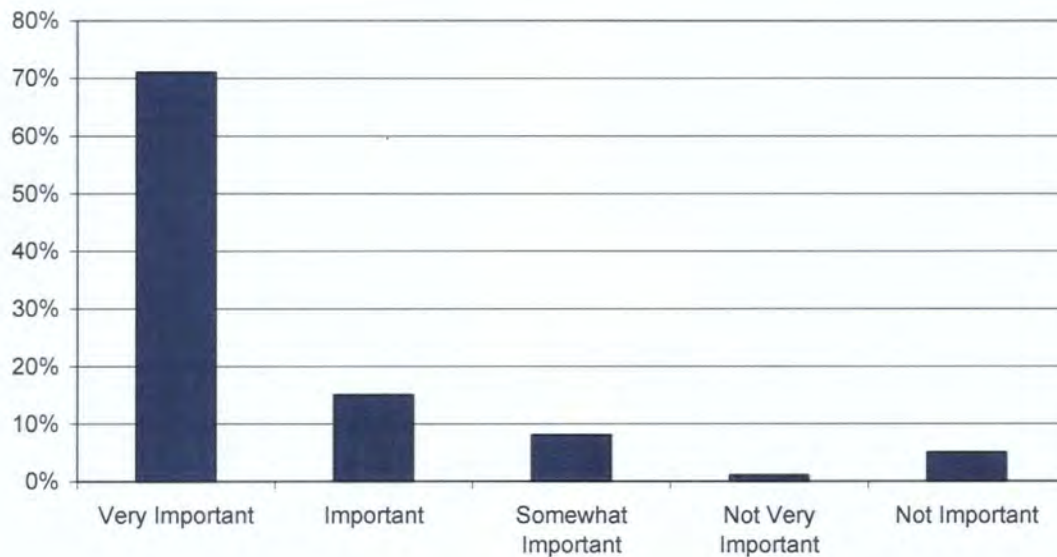
Business Development/Credibility: Many customers are requesting their potential suppliers to be certified in order to have a more efficient and predictable JIT supply chain.

For shippers and carriers, it implies reaching new clients via reliable supply chain programs. Therefore, it becomes a differentiation factor for carriers when facing low cost based competitors.

Compliance for Customer Requirements: Similarly to EDI requirements some years ago, suppliers retain their customer base by adopting their customer's new prerequisites.

Efficient border crossing was rated as very important by over 70% of the organizations; (See Chart F). These findings demonstrate the growing impact border issues are having over the business operations of Canadian companies. If not addressed, the net loss could be detrimental to many organizations.

Chart F: Importance of Efficient Border Crossing



That being said, according to Forrester Research, 40% of companies indicated that customs compliance is the greatest challenge they face in the export process, (See Chart 3). It was rated even higher than finding new buyers in a company's export process.

Chart 3:



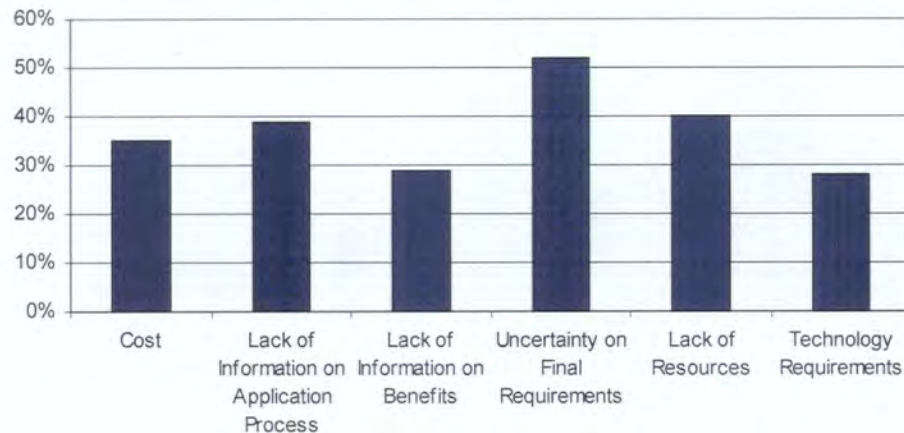
Source: Forrester Research 2002

Over half the respondents cited the uncertainty on final requirements was the main reason why their company had no current border initiative. This was followed by a lack of information of the application process (39%) and the cost (35%) involved. These results provide a solid argument for a document to be created that will provide

companies with the necessary information to make a decision to implement a border compliance strategy.

Technology and implementation

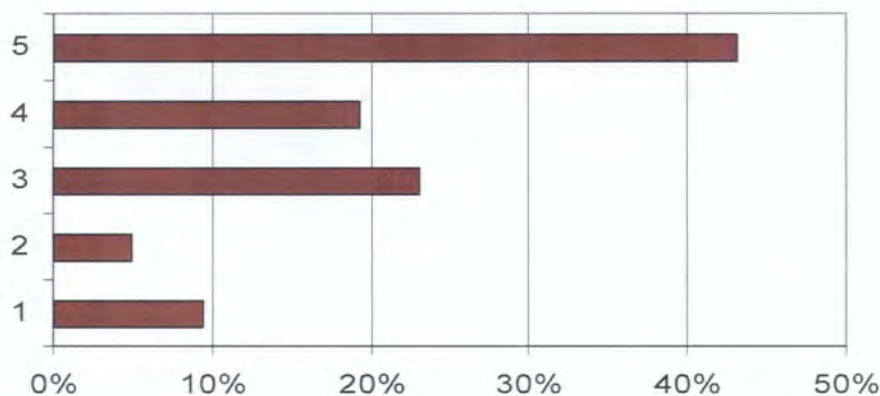
Chart G: Barriers to Comply with Border Compliance Initiatives



Before organizations decide to implement the border compliance certification process, they have to ensure that they have executive commitment. According to Forrester Research more than 50% of all information technology (IT) projects fail because they failed to gain CEO commitment from the beginning. Senior Management buy-in will determine the success rate of this initiative as will a champion at this level.

For more than 40% of the firms, border compliance certification is very important as a corporate initiative and seen as a key strategic component of the organization. On the other hand, close to 30% of the firms indicate that certification is of moderate to low importance as a corporate initiative. This perception which makes such programs harder to implement.

Chart H – Importance of border compliance certification as a corporate initiative (5 being very important and 1 not important)



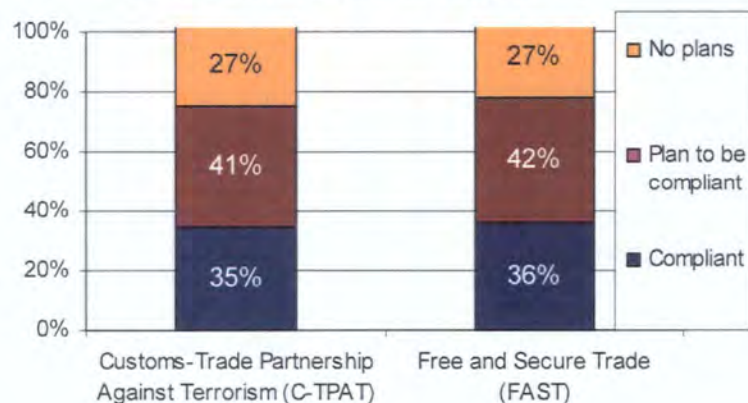
Border compliance strategy differs dramatically by sector. More than 70% of the logistics service providers, a sector that include third party logistics (3PL) and transport related services, have a strategy in place. Manufacturers ranked second with 57% while only 37% of the retail sector has a strategy in place. This data demonstrates clearly that export related players are being pushed to develop a strategy faster than actors that mainly import goods into Canada.

Chart I- Presence of a border compliance strategy



In terms of border compliance certification programs, such as Customs-Trade Partnership Against Terrorism (C-TPAT) and Free and Secure Trade (FAST), close to 35% of the firms across all sectors are currently certified, close to 42% plan to be compliant and only 27% have no plans to be compliant.

Chart J- Border compliance adoption rate



As it was in the strategy section, border compliance adoption rates differ widely by industrial sector. JIT export related supply chain partners, such as manufacturing and logistics service providers, are leading the way while retailers are far behind in the adoption and in the planning to be compliant category. The wholesale trade /

distribution currently has a low adoption rate but plans to be compliant at a high level in the near future.

Customs-Trade Partnership Against Terrorism (C-TPAT)	Compliant	Plan to be compliant	No plans
Manufacturing	40%	33%	27%
Logistics Service Providers	38%	43%	19%
Wholesale	25%	60%	15%
Retail	14%	29%	57%
Free and Secure Trade (FAST)	Compliant	Plan to be compliant	No plans
Manufacturing	17%	55%	29%
3PL	31%	49%	20%
Wholesale	20%	55%	25%
Retail	5%	43%	52%

Border Compliance program adoption rate also differs dramatically by size of firm, especially for the U.S. C-TPAT program. Compliance levels go from 19% for SMEs to more than 46% at the large corporation level for C-TPAT. On the other hand, SMEs are planning to be compliant in the near future; only 33-35% have no plans to be certified in C-TPAT or FAST programs.

Customs-Trade Partnership Against Terrorism (C-TPAT)	Compliant	Plan to be compliant	No plans
Less than 5M\$	19%	48%	33%
5-25M\$	23%	49%	28%
25-250M\$	36%	40%	23%
250M\$ +	46%	33%	21%
Free and Secure Trade (FAST)	Compliant	Plan to be compliant	No plans
Less than 5M\$	20%	45%	35%
5-25M\$	25%	49%	26%
25-250M\$	28%	48%	24%
250M\$ +	29%	45%	26%

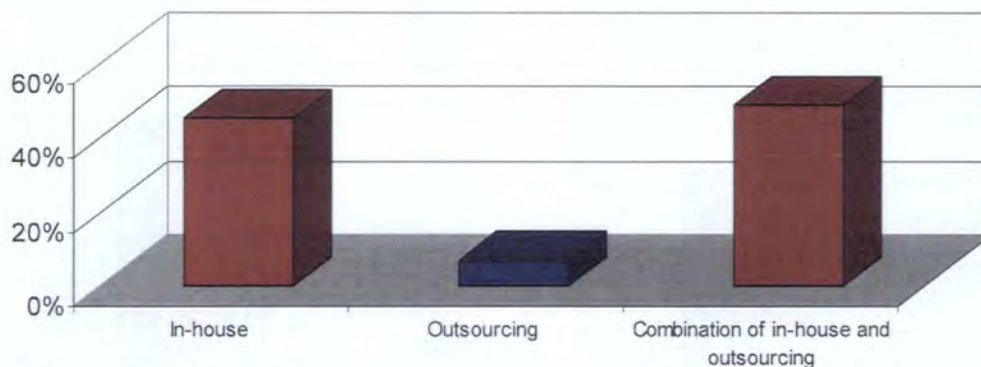
IMPLEMENTATION AND TECHNOLOGY

Timeline to implement the planned border compliance initiatives also differs by sector. Logistics service providers are the most proactive with 59% of them planning a 6-months implementation timeline. Manufacturers and wholesalers are mainly aiming at a 1-year time frame (55 and 59% respectively) while retailers are spread out between 6 months to over 2 years.

Timeline to implement the planned border compliance initiatives?				
	Manufacturing	Logistics Service Providers	Wholesale	Retail
6 month	27%	49%	12%	17%
1 year	55%	36%	59%	33%
2 year	12%	13%	18%	17%
over 2 year	6%	2%	12%	17%

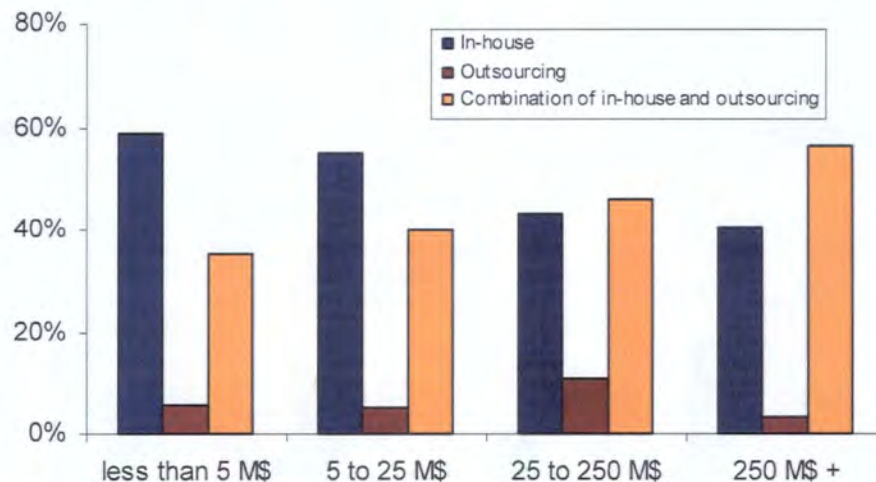
Most companies plan to implement the border compliance programs either in-house or in a combination of in-house and outsourcing. Very few have taken the decision to fully outsource the implementation phase of such a project.

Chart K - Preferred process of implementation of border compliance initiatives



The decision to outsource the implementation process does not differ by size of firm. From SMEs to large corporations, only 5-11% of the organizations plan to fully outsource the implementation process. Results are also similar across all size of firms for in-house and combination of in-house and outsourcing.

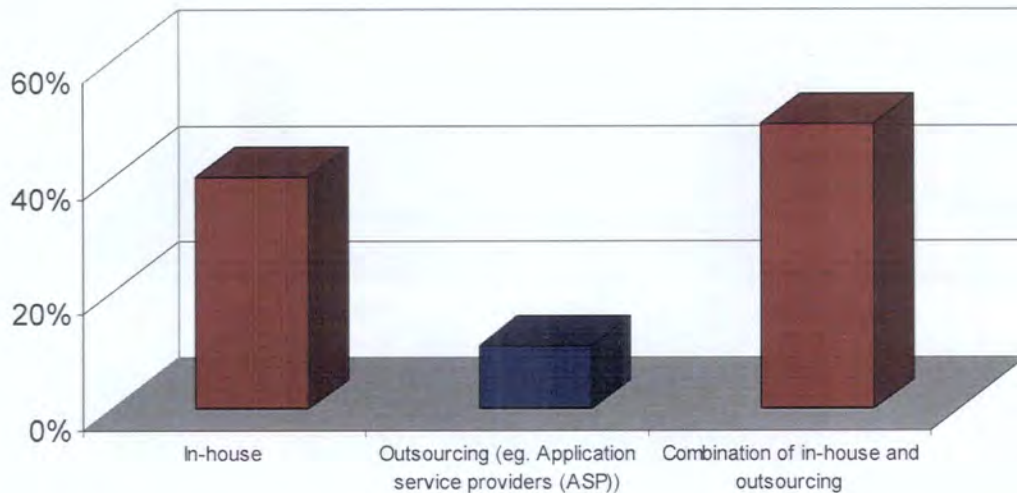
Chart L - Preferred process of implementation of border compliance initiatives by size of firm



The selection process for the information systems and technology approach (eg. Electronic manifest, electronic seals, duties and tariff management, rules and regulations automation) are similar to the choice of the program implementation

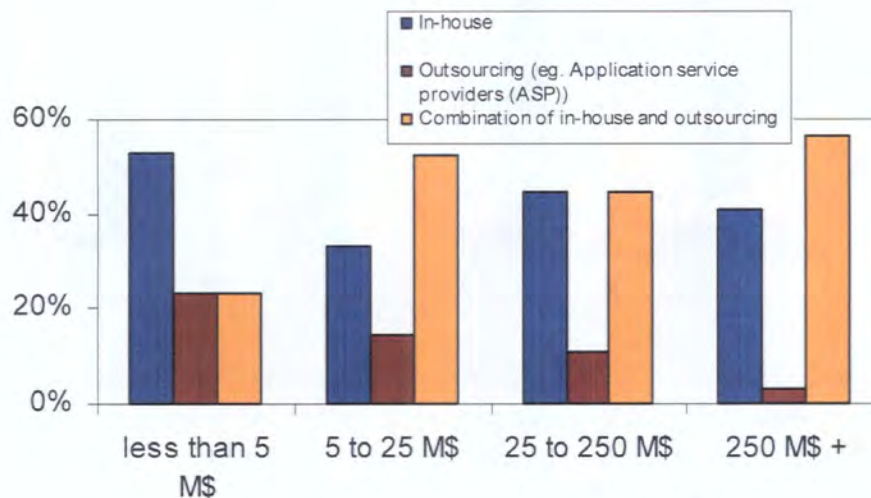
process. Most companies prefer to have in-house or a combination of in-house and outsourcing for their technology processes.

Chart M - Preferred process of information systems and technology approach



Although outsourcing of information systems and technology is not a high priority in any sector or size of firm, it is interesting to note that the smaller the firm is, the more inclined it is to fully outsource technology. Chances are, a smaller company without a fully integrated information systems department and expertise will outsource these tasks.

Chart N - Preferred process of information systems and technology approach by size of firm



CONCLUSION

After analyzing the findings of the National SCL and IC study on border compliance, it becomes increasingly apparent that companies see the necessity of becoming compliant. Industry Canada, in partnership with SCL has recently released a "Border Compliance Certification Toolkit" that will help your company achieve its border initiative goals. We would like to thank everyone that took the time to answer the survey and provide input into our study.

ANNEX – STUDY METHODOLOGY

Supply Chain & Logistics Canada (SCL) administered the National Smart Border survey. Invitation was sent electronically to more than 3, 000 supply chain professionals across the country. Participants had from January 28, 2004 until February 15, 2004 to fill out a web questionnaire. Survey participants will receive detailed results of the survey including an in-depth analysis document containing all statistical and anecdotal information available. Non-participants will only have access to a discussion paper.

The survey results analysis and the study report have been developed in partnership between SCL and Industry Canada via an industry led committee. The committee is also leveraging the study information to develop a Border Compliance Certification Tool Kit for Canadian companies.

Key statistics on the survey participants:

Respondents: 283

Breakdown by sector

Manufacturing : 27%

Wholesale trade: 13.5%

Logistics Services / Transport: 41.6%

Retail : 5.1%

Information Technology / Consulting / Services/Other: 6.7%

Breakdown by size of firm

Less than 5 million \$: 15.3%

Between 5 to 25 million \$: 20.2%

Between 26 to 250 million \$: 34.4%

More than 250 million \$: 30.1

Breakdown by activity

Consumer product goods (CPG) / Agri-food products / General Merchandise: 41.4%

Automotive / aerospace: 8.6%

Forest products: 0.6%

Chemical / Pharmaceutical: 12.1%

Furniture: 1.1%

Other: 36%

ANNEX 1 – COMPARATIVE TABLES BY SECTOR

International activities as % of total revenue.				
	Manufacturing	3PL	Wholesale	Retail
Export	43.13%	37.56%	22.75%	0.33%
Import	37.37%	34.57%	56.44%	28%
Import and export	62.89%	45.63%	61.11%	33.33%

Identify the level of importance of efficient border crossing for your organization. Rank from 1 to 5 (5 being very important and 1 not important).				
	Manufacturing	3PL	Wholesale	Retail
5	77%	75%	81%	63%
4	18%	14%	10%	13%
3	2%	8%	10%	25%
2	2%	0%	0%	0%
1	0%	3%	0%	0%

On average how much longer is it now taking for your goods to cross the border?				
	Manufacturing	3PL	Wholesale	Retail
30 minutes	14%	20%	5%	14%
1 - 2 hrs	37%	47%	29%	29%
4 - 8 hrs	33%	22%	19%	29%
1 Day	7%	3%	14%	0%
More than 1 day	0%	3%	0%	14%
None of the above	16%	5%	33%	14%

How much additional cost / day is your company paying due to increased border delays?				
	Manufacturing	3PL	Wholesale	Retail
\$100	12%	11%	14%	14%
Between \$100 - \$500	36%	38%	24%	14%
Between \$500 - \$1000	2%	13%	14%	0%
More than \$1000	7%	17%	0%	29%
None of the above	43%	21%	48%	43%

Does your organization have a border compliance certification strategy?				
	Manufacturing	logistics Service Provider	Wholesale	Retail
Yes	57%	73%	51%	37%
No	43%	27%	49%	63%

Rate border compliance certification as a corporate initiative. Rank from 1 to 5 (5 being very important and 1 not important).

	Manufacturing	3PL	Wholesale	Retail
5	30%	56%	33%	17%
4	26%	14%	33%	40%
3	30%	20%	19%	14%
2	7%	5%	5%	0%
1	7%	5%	10%	29%

Is your organization compliant plan to be compliant or have no plans to be compliant with the following initiatives?

Customs-Trade Partnership Against Terrorism (C-TPAT)	Compliant	Plan to be compliant	No plans
Manufacturing	40%	33%	27%
Logistics Service Providers	38%	43%	19%
Wholesale	25%	60%	15%
Retail	14%	29%	57%
Free and Secure Trade (FAST)	Compliant	Plan to be compliant	No plans
Manufacturing	17%	55%	29%
3PL	31%	49%	20%
Wholesale	20%	55%	25%
Retail	5%	43%	52%

Identify the primary benefits of border compliance to your company (check all that apply).

	Manufacturing	3PL	Wholesale	Retail
Timing / efficiency	85%	85%	80%	86%
Cost reduction	48%	65%	55%	29%
Security	35%	58%	55%	29%
Business development	35%	67%	30%	29%
Credibility	43%	63%	60%	29%
Compliance for customer requirements	38%	67%	50%	14%

Timeline to implement the planned border compliance initiatives?

	Manufacturing	Logistics Service Providers	Wholesale	Retail
6 month	27%	49%	12%	17%
1 year	55%	36%	59%	33%
2 year	12%	13%	18%	17%
over 2 year	6%	2%	12%	17%

Indicate which process of implementation for your border compliance initiatives.				
	Manufacturing	3PL	Wholesale	Retail
In-house	32%	61%	28%	20%
Outsourcing	12%	2%	6%	0%
Combination of in-house and outsourcing	56%	37%	67%	80%

Indicate which process for your Information systems and technology approach (eg. Electronic manifest electronic seals duties and tariff management rules and regulations automation...).				
	Manufacturing	3PL	Wholesale	Retail
In-house	44%	47%	22%	20%
Outsourcing (eg. Application service providers (ASP))	9%	7%	17%	0%
Combination of in-house and outsourcing	47%	49%	61%	80%

Identify the barriers for your organization to comply with new border compliance initiatives (check all that apply).				
	Manufacturing	3PL	Wholesale	Retail
Cost	38%	38%	45%	33%
Lack of information on application process	36%	40%	45%	33%
Lack of information on benefits	28%	22%	30%	17%
Uncertainty on final requirements	56%	46%	45%	50%
Lack of resources	59%	28%	35%	0%
Technology requirements	23%	28%	25%	17%

ANNEX 2 – COMPARATIVE TABLES BY SIZE OF FIRM (M\$)

International activities as % of total revenue.	less than 5	5 to 25	25 to 250	250+
Export	40.50%	31.13%	34.08%	41.27%
Import	35.38%	45%	48.64%	30.36%
Import and export	41.82%	58.17%	54.56%	46.25%

Identify the level of importance of efficient border crossing for your organization. Rank from 1 to 5 (5 being very important and 1 not important).				
	less than 5	5 to 25	25 to 250	250+
5	68%	68%	78%	76%
4	14%	14%	18%	12%
3	14%	7%	4%	12%
2	0%	4%	0%	0%
1	5%	7%	0%	0%

On average how much longer is it now taking for your goods to cross the border?				
	less than 5	5 to 25	25 to 250	250+
30 minutes	5%	21%	14%	15%
1 - 2 hrs	40%	28%	47%	39%
4 - 8 hrs	15%	24%	20%	22%
1 Day	10%	7%	8%	2%
More than 1 day	5%	0%	2%	5%
None of the above	25%	21%	10%	17%

How much additional cost / day is your company paying due to increased border delays?				
	less than 5	5 to 25	25 to 250	250+
\$100	14%	17%	8%	8%
Between \$100 - \$500	43%	31%	31%	33%
Between \$500 - \$1000	5%	17%	12%	3%
More than \$1000	0%	0%	12%	26%
None of the above	38%	34%	35%	31%

Does your organization have a border compliance certification strategy?				
	less than 5	5 to 25	25 to 250	250+
Yes	38%	48%	64%	82%
No	62%	52%	36%	18%

Rate border compliance certification as a corporate initiative. Rank from 1 to 5 (5 being very important and 1 not important).				
	less than 5	5 to 25	25 to 250	250+
5	38%	54%	40%	41%
4	29%	7%	14%	31%
3	14%	18%	32%	21%
2	5%	7%	6%	5%
1	14%	14%	8%	3%

Is your organization compliant plan to be compliant or have no plans to be compliant with the following initiatives?			
Customs-Trade Partnership Against Terrorism (C-TPAT)	Compliant	Plan to be compliant <input type="checkbox"/>	No plans
Less than 5M\$	19%	48%	33%
5-25M\$	23%	49%	28%
25-250M\$	36%	40%	23%
250M\$ +	46%	33%	21%
Free and Secure Trade (FAST)	Compliant	Plan to be compliant <input type="checkbox"/>	No plans
Less than 5M\$	20%	45%	35%
5-25M\$	25%	49%	26%
25-250M\$	28%	48%	24%
250M\$ +	29%	45%	26%

Identify the primary benefits of border compliance to your company (check all that apply).				
	less than 5	5 to 25	25 to 250	250+
Timing / efficiency	72%	80%	92%	91%
Cost reduction	72%	56%	54%	58%
Security	28%	56%	46%	52%
Business development	67%	40%	46%	52%
Credibility	50%	56%	54%	58%
Compliance for customer requirements	50%	48%	49%	64%

Timeline to implement the planned border compliance initiatives?				
	less than 5	5 to 25	25 to 250	250+
6 month	31%	43%	38%	27%
1 year	56%	43%	35%	50%
2 year	6%	10%	21%	13%
over 2 year	6%	5%	6%	10%

Indicate which process of implementation for your border compliance initiatives.				
	less than 5 M\$	5 to 25 M\$	25 to 250 M\$	250 M\$ +
In-house	59%	55%	43%	41%
Outsourcing	6%	5%	11%	3%
Combination of in-house and outsourcing	35%	40%	46%	56%

Indicate which process for your Information systems and technology approach (eg. Electronic manifest electronic seals duties and tariff management rules and regulations automation...).				
	less than 5 M\$	5 to 25 M\$	25 to 250 M\$	250 M\$ +
In-house	53%	33%	44%	41%
Outsourcing (eg. Application service providers (ASP))	24%	14%	11%	3%
Combination of in-house and outsourcing	24%	52%	44%	56%

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