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Using Marketing and Education to Reduce the "Border Effect's" Impact on Freight Traffic Routing

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Abstract

In response to 9/11, several changes have been implemented at the Canada-U.S. border to increase the security and efficiency of freight traffic. However, in many cases, transportation companies and shippers have been very slow to adopt new programs involving intelligent transportation systems (ITS) such as C-TPAT, FAST and advance electronic manifests. Slow adoption rates of new programs adds to the "border effect" – when given a choice, many transportation companies and shippers will choose to conduct domestic, rather than transborder, business. If Western Canada is to develop as a Pacific Gateway to North America and not just to Canada, approaches to minimizing the border effect must be identified, understood and implemented. One approach is through the educating and marketing of new border programs (involving intelligent transportation systems) to potential users. "Smart Gateways and Corridors" are not just about the application of technology to increase security and efficiency. Users must be educated and supportive of border programs as well. Educating and marketing to users of new government programs is an area that very little research has been conducted in. This paper surveys users to identify some of the barriers to border program adoption, highlights the methods users prefer to have information communicated to them, and presents education and marketing approaches designed to increase the use of new border programs.

Keywords

Introduction

Whether it involves entertainment, convenience, medicine or security, the forward movement of our culture has included and been amplified by developments in technology. Recent security concerns have led to an increased emphasis on transborder programs and policies. The natural metamorphosis of these security programs has evolved to include technology; however, as efficient as technology is intended to be, if users do not adopt it, it has minimal effect. Transportation stakeholders sometimes refrain from adopting these systems, thereby forfeiting their participation in new security programs, which has reduced overall post-9/11 border efficiency.

It is no surprise that since September 11th, 2001 the Canadian and American governments, to enhance the security of the extensive border that divides the two countries, have implemented many different programs and regulations. Many of these incorporate the use of intelligent transportation systems (ITS), which are systems relying on the collection, transmission, and application of real-time data and information. These systems can relieve congestion, improve safety and security, while simultaneously enhancing productivity (Intelligent Transportation Systems, 2006). Since security concerns still trump economic concerns, applying ITS which can enhance both security and efficiency must be a priority as it can achieve "buy-in" by both security focused officials and transportation companies/shippers that need an efficient border. However, the adoption rate of these programs has been slow and, while reasons have been identified, no study has suggested a marketing and education plan that responds to these low rates. This slow adoption of border programs that enhance both security and efficiency is part of the "border effect" challenge.

This is an extremely important issue for Western Canada's gateway positioning. The Canadian market is not a priority for exporters in Asia and Europe – the United States is. For most products the California market is more important than the entire Canadian market. However, connecting to the major international markets must be a priority for Canada's future economic health in a global economy. Therefore, it is critical that Western Canada position as a gateway between overseas markets and the entire North American market. For this reason, border effects – any effect that encourages business to bias towards an east-west direction versus crossing the border – are particularly damaging.

In the studies reviewed, some potential explanations regarding resistance to ITS adoption and related government programs were provided. These included a perceived lack of measurable benefits, job security, staff/educational needs (lack of resources), and an overall lack of knowledge about the issue. For the purpose of this study, a written survey was conducted with six different stakeholders that were identified (U.S. and Canadian brokers/freight forwarders, U.S. and Canadian trucking companies, U.S and Canadian importers/exporters), followed by a phone interview with the most responsive group, Canadian trucking companies. Programs, issues and stakeholders were identified from the BITSAFS' report "Regulations and Initiatives Affecting Secure, Efficient and Safe Cross-

Border Freight Movements" (Chow et al, 2006). Technologies were identified from the BITSAFS' report "Review of ITS Technologies with Application to the Security and Efficiency of Cross-Border Freight Movements" (Chow et al, 2007a). The complete base survey work that this paper uses can be found in the BITSAFS' report "Identifying Carrier and Shipper Issues in Cross-Border Trade: Enhancing Efficiency in Light of New Security Requirements" (Chow et al, 2007b). This paper builds upon the BITSAFS' report "Marketing and Educational Barriers to the Adoption of Intelligent Transportation Systems (ITS) and Border Programs" (Chow et al, 2007c).

ITS: Intelligent Transportation Systems and the Border Effect

Intelligent Transportation Systems (ITS) encompass "a broad range of diverse technologies applied to transportation to make systems safer, more efficient, more reliable and more environmentally friendly, without necessarily having to physically alter existing infrastructure. The range of technologies involved includes sensor and control technologies, communications, and computer informatics and cuts across disciplines such as transportation, engineering, telecommunications, computer science, finance, electronic commerce and automobile manufacturing" (What is ITS?, 2005). Examples of ITS include traffic information and routing systems, electronic toll collection, weigh-in-motion stations for commercial vehicles, e-seals for international cargo containers, and FAST border lanes for truck movements. These systems apply an integrated approach to improving efficiency in the transportation network.

While ITS has traditionally been focused on passenger vehicles, urban public transportation systems, efficiency and safety, there is growing application to the critical field of efficiency and security of international transportation systems. Tailored ITS applications can help increase logistics chain efficiency by automating tasks that have previously been manual, collecting routing information of cargo, tracking and traceability features of shipments, or increasing security through transportation worker biometric systems, to name a few. Through increasing the visibility of the supply chain, there lies great potential in ITS to increase freight/cargo security. Security, as many transportation stakeholders are aware, is a primary concern of international shipping, particularly for cross-border, U.S.-bound cargo. Therefore, the government has taken the initiative to apply ITS to cross-border programs and has hoped for widespread stakeholder adoption.

ITS systems can provide a strong resolution to some of the challenges in the logistics chain. Since the 9/11 terrorist attacks, customs agencies, particularly U.S. Customs and Border Protection, have taken a very proactive stance regarding security. One particular issue is with the remittance of paper manifests. Historically, paper manifests were the way in which customs received notice from persons shipping goods across the border. These important documents contain vital information relating to trade data, such as volumes and statistics. The manifest also assesses what is being shipped. However, collecting this information in paper form is very tedious because the data cannot be easily processed. In this instance, ITS provided a solution in e-manifests, manifests that are electronically transmitted to customs agencies prior to arrival at the border with the information linked to

a specific vehicle.[1] This way, customs has time to review the manifests and anticipate the arrival of the truck. Theoretically, the truck and goods will be processed quicker to effectively streamline the logistics chain and security enhanced through the application of automated targeting systems, driver biometric ID cards, and truck transponders.

Of course, the implementation of ITS requires adjustments. The effectiveness of each ITS must be tested by the users themselves. The theoretical merits of ITS are only beneficial if the system is paired with the appropriate policies and is adopted by stakeholders. There are many barriers to adoption, including the cost of the technology. Due to profit maximization on the part of stakeholders, even though a system may have tangible benefits, if adoption is too expensive the price will have a prohibitive effect on widespread adoption. Since adoption is only required for transborder freight, there is a resulting border effect.

Clearly, just promoting the technology of ITS in itself is not the answer to adoption. The attributes of the complete system need to make a compelling case for adoption. However, even that is not enough. Adoption must also be "sold" – the system must be bundled appropriately *and* marketed, stakeholders educated about its benefits, and supported with appropriate service staff, background reference materials and other resources.

Background Discussion Based on Literature Search

From a technology viewpoint, the potential of ITS to increase program efficiency has been recognized for some time. Minister David Collenette unveiled Canada's ITS strategy in November of 1999.[2] In 1991, the U.S. Congress initiated the Intelligent Vehicle Highway Systems (IVHS) in a manner that was intended to appropriately utilize intelligent transportation systems so that they were compatible with, and fit within, a larger context. Since 1991, the IVHS program changed names and is now called the Intelligent Transportation Systems (ITS) program (DeBlasio, 2000).

Many reports cite a lack of educational materials and marketing outreach conducted to increase ITS adoption but most do not address the issue in detail. For instance, one study authored by Transport Canada in 1999 measured applications of ITS in the trucking industry. While this study is eight years old, its core observations and conclusions are generally not countered in work since that time and its basic tenants are tested by the survey work for this paper. Since Intelligent Transportation Systems are required for the newly mandated security programs, barriers to ITS adoption also create barriers to program adoption. The report found a large degree of adoption among large companies (fleets of at least 100 vehicle) but determined several problems that are faced almost exclusively by small to medium size trucking operations. The following are barriers to ITS deployment identified in the study:

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[1] E-manifests are a key input into the U.S. Automated Commercial Environment. In addition to providing commercial data, the information is compared to numerous security databases and is analyzed by sophisticated Automated Targeting Systems to help identify higher-risk freight movements.
[2] http://www.its-sti.gc.ca/en/menu.htm

- Cost of investment in the technology. The short-term life cycle and progressive innovation results in product obsolescence and diversification of ITS solutions; therefore, it is difficult to keep up with the expenditure to constantly utilize current technology;
- Knowledge of ITS. Unlike the United States, Canada does not have outreach programs. The trucking industry lacks the technical skills to promote use of technology;
- Privacy. Drivers and executives of trucking companies, and commercial vehicle product suppliers are concerned about privacy and intellectual property; and,
- Resistance to change. This labour and management mindset deters ITS innovation as operators see automation as loss of jobs.[3]

The report suggests the following possible reconciliatory measures to address the identified concerns:
- Increase education. Educational materials and programs about the benefits and costs of ITS can be circulated and channeled through industry associations, ITS-Canada (a national industry association) and focused government information campaigns;
- Regulatory. Implementing guidelines to protect privacy;
- Competitiveness. Deploying ITS to remain competitive;
- Technology. Introduce simple, user-friendly technologies for easy integration.

Another study completed a year later by the U.S. Department of Transportation ITS division notes the following non-technical issues regarding ITS implementation:
- Awareness and perception of ITS;
- Concerns over long-term operations and maintenance;
- Regional deployment;
- Human resources;
- Multi-organizational relationship;
- Ownership and use of resources;
- Procurement;
- Intellectual property and privacy issues; and,
- Issues surrounding legal liability (DeBlasio, 2000).

Similar issues are, once again, identified in testimony given to the Technology Committee on Science; specifically, the most important non-technical barrier are staffing and educational needs. Solutions include training new employees and re-training existing employees, which requires the development of an educational program.[4]

These studies provide a basic start to determining the reasons why intelligent transportation systems have not experienced common adoption. It is important to note that the lack of educational materials is cited as a sizeable barrier to use. As for an "accountant's view", in order for intelligent transportation systems to be economical, the

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[3] http://www.tc.gc.ca/pol/EN/Report/its/menu.htm
[4] http://www.house.gov/science/walton_4-23.html

cost of the technology and the time saved at the border due to the technology must be less then or equal to the productivity lost due to not adopting the system.

The process of selecting deployments and expenditures can be very complicated and, due to profit maximizing behavior on the part of stakeholders, is heavily based on costs. If a company would be required to pay more for a system then the perceived benefits, they will not voluntarily adopt it. There is also the issue of mandatory requirements. For example, should there be a mandatory worldwide standard for electronic cargo seals? This mandate would increase security, but would the stakeholders themselves perceive the benefits to outweigh the costs? The mandatory filing of electronic manifests met with significant industry resistance and has a long history of delay and political pain. The recent trend is towards voluntary adoption of systems that can support border freight traffic (such as C-TPAT, FAST, weigh-in-motion). Although cost is not the only standard of measurement considered by stakeholders, it is heavily weighed during the decision making process. However, with the trend towards voluntary adoption, the need to promote adoption through marketing and education is even more important.

The issue of benefit-cost analysis (or more accurately, the surprising lack of publicly available analysis) is addressed in (Chow et al, 2006). For example, one study estimated that over the next 10 years the deployed Dedicated ITS Truck Lanes (including reduced broker stops) would result in a demonstratively impressive stream of benefits to the economy. This will occur through motor carrier travel time and operations savings, with discounted benefits growing from $8.6 million in 2003 to $29.3 million in 2013. The primary source of these benefits will be from the decreasing southbound queues. Even non-ITS equipped vehicles benefited significantly from the reduced queues due to the ITS trucks using the dedicated ITS Truck Lanes. Essentially, both ITS and non-ITS equipped trucks will see substantial time savings under a deployed dedicated ITS Truck Lane system at the border (U.S. Department of Transportation, 2003). Therefore, there is some evidence that based on benefit-cost, ITS is worth adopting, so a pursuit to find deficiencies in marketing these systems will be insightful into why they are adopted so slowly.

A 2003 survey states that while ITS have been tested and are expected to yield benefits, ITS use is not widespread among stakeholders. Perhaps stakeholders do not have access to these resources or studies documenting benefits and costs of ITS, or stakeholders are not even aware of the different ITS in the first place. Among several items, this study found that a marketing program demonstrating the potential benefits needs to be developed to encourage increased usage of the tested ITS technologies (U.S. Department of Transportation, 2003).

From the survey that was completed, those who used C-TPAT stated that it moved goods across the border more efficiently then did conventional methods. However, C-TPAT is not as efficient as it could be simply because there are not enough users, which is most likely due to the difficulty associated with getting firms to apply and be approved. These issues can be solved by having a more user-friendly application process, with staff available to answer questions or provide feedback, and a more organized database for

keeping applications intact. For systems being developed under the U.S. Automated Commercial Environment, continuous software improvement is ongoing to help the program serve its purpose. Most of these systems are driven by the need to fulfill security requirements, which is the primary concern of U.S Customs and Border Protection and the Department of Homeland Security. There is still much to be done to ensure that the border "operates efficiently and effectively under all circumstances" as stated in the SMART Border Declaration.[5]

The most striking finding while conducting the literature search for this and related work is just how little research has been conducted in how to best market changes in government programs to stakeholders and educate them about new regulations and systems. Given the prevalence of government in modern economies, this was most unexpected.

Importance of ITS Border Programs Adoption Rates for North America

Border programs such as C-TPAT and FAST are transnational in nature, which makes binational support a necessary part of the programs success. The Canadian government is likely to support U.S. ITS border program initiatives if they are to be made at a national scale, since the United States is Canada's primary trade partner, accounting for 74% of Canada's total international two-way trade in 2004.[6] The percentage of overall U.S. trade with Canada only accounts for 19.8% of U.S. total international trade.[7] Also, the United States has several more pressing issues on the international front. To date, transborder programs have been pushed more by the United States – as part of their security agenda. However, from an importance to the economy and positioning as a gateway between overseas markets and all of North America, it should really be Canada on the forefront of applying ITS to the corridors that cross the Canada-U.S border and promoting its adoption by industry. At this point in time, substantial progress has been made applying ITS to border issues, though, if success is measured by adoption rates, some ITS transborder programs have a long way to go. This paper hopes to assist Canadian (and U.S.) efforts in this area by focusing on marketing and educational issues. Assuming that ITS are a viable technology and cost effective solution, how should they be promoted to stakeholders?

Barriers to Greater ITS Adoption at the Border

Currently, many cross-border ITS projects are underway in both Canada and the United States, such as the aforementioned FAST program and electronic-seal testing for the marine sector in Operation Safe Commerce (Greenemeier, 2004). Their successful implementation and adoption by industry will have a significant impact upon border effects, Western Canada's gateway position, and the success of transborder trade corridors. The U.S. and Canada have promoted ITS in one fashion or another, but the current marketing/educational strategies have not yielded significant gains in the voluntary adoption of intelligent transportation systems at the border. This paper explores both anecdotal and concrete evidence in the attempt to determine what communication, marketing and educational barriers exist and how they may be addressed.

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[5] http://www.dfait-maeci.gc.ca/can-am/main/border/smart_border_declaration-en.asp
[6] http://europa.eu.int/comm/trade/issues/bilateral/countries/canada/index_en.htm
[7] http://www.census.gov/foreign-trade/statistics/highlights/top/top0602.html

A survey to key stakeholders in the British Columbia-Washington State regional freight industry was distributed to address the overall topic of border issues (Chow et al, 2007b).[8] The literature review identified various reasons for resistance to ITS adoption, including job security, costs outweighing the perceived benefits, staff and educational needs, and lack of knowledge about the topic/issue by the general public. In the Fall of 2006, the survey on cross-border commerce was distributed to five different categories of stakeholders from both the United States and Canada. The stakeholders identified were importers, exporters, trucking companies, brokers and freight forwarders. These surveys were faxed, and certain follow-up interviews were conducted to receive a more comprehensive response. Many of the findings in that report echo those of the past, reinforcing the unmet needs of current and potential users. From that major report, the more relevant issues directly affecting the marketing and education needs to increase ITS border program adoption are distilled in this paper and expanded upon.

It is extremely important to remember that the observations made in the rest of this paper are based on survey and interview results. Therefore, this reflects the *perception* that exists among stakeholders. It does not mean that these observations reflect the actual facts of the situation. Having said that, any negative perceptions can be considered "reality" – highlighting the need for enhanced communications, marketing and education.

Communications and Perceived Attitudes

This section addresses the various communication issues surrounding the marketing and educating of the users of transborder ITS programs based on stakeholder survey responses and interviews.

Preferred Method of Communication and by Whom. As there were ties for the top two ways companies receive information about border programs, only those identified as the most frequently used media are presented here:
    1. Customs agency website *and* e-mail;
    2. Trade magazine *and* newsletter.

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[8] Note that the research conducted by BITSAFS supporting this paper takes a very liberal view of what constitutes ITS. This is required because there is not a widespread understanding among shippers and logistics service providers as to what exactly constitutes ITS. For a clear definition of ITS, refer to the ITS Architecture for Canada (currently being updated in part because it pre-dates post-9/11 influence on the importance of security), the U.S. National Architecture, and the recently completed Border Information Flow Architecture (BIFA) which is a "regional subset" covering the border and "links" the two national ITS architectures. For this research, the systems discussed are part of the main border programs examined during the stakeholder survey. Specific "ITS-related" questions were primarily focused on communication technologies, or systems that government(s) has established for common use, such as detection systems and weigh-in-motion. The survey identified that most of the stakeholder concerns surround ACE, FAST and C-TPAT, all of which incorporate ITS to some degree. ACE has a portal that requires users to input manifest information into a large database for paperless clearance and that information is linked to specific vehicles. FAST uses a transponder to identify a vehicle using RFID technology at the border linking it into other ACE systems. C-TPAT is a security process approval program for shippers, elements of which can use ITS, and data flows exist through the Automated Commercial Environment.

Upon review of the CBP and the CBSA websites, it was determined that there is a lot of relevant information displayed on both sites. With the vast amount of information already available to the public, it is surprising that so few respondents were aware of various border programs' existence. Those that were aware of and experienced problems with programs such as C-TPAT had little working knowledge of the programs. There is even a section in the CBP website about C-TPAT and best practices, as well as the typical Frequently Asked Questions. It could be argued that there is so much information on the website that it can be difficult for the user to navigate through the vast resources, even if they had time to look for it. Many probably just call CBP or their industry association (assuming the association sends information to them) to find out more detailed information.

E-mail is another way respondents prefer to obtain information. In fact, this method is so favored that respondents claim it as their preferred method of communication. These e-mails probably come from government newsletters or their association, such as the British Columbia Trucking Association. For British Columbia based trucking companies, there is a heavy reliance on the BCTA for information. This reliance is likely due to the fact that the information sent to them is more relevant to their mode, while the customs websites cater to many different modes of transportation.

No Perceived User Consultation. A few of the respondents felt that these ITS border programs were developed without the consultation of the users – those in the specific industry/transportation mode. They believed that the programs enhanced security but not efficiency, which can increase business costs. Participants have identified efficiency and future mandatory usage as their main reasons for voluntarily adopting the appropriate technologies, such as the ACE Portal for electronic manifests and C-TPAT (in conjunction with FAST). One suggestion was to form an advisory board or consultative committee to examine/assess the feasibility of these programs and consider how closely these programs adhere to the mandate of both CBSA and CBP.

Lack of Customer Service. One of the major concerns of the survey respondents was the perceived lack of customer service during the application process of certain programs. Although U.S. CBP has many informational sessions in all areas, there is a short window of time when representatives are available to answer questions. Once the window expired, respondents experienced difficulties trying to get in touch with anyone in CBP to answer their questions or follow-up on their applications. A FAST marketing survey conducted by the Whatcom Council of Governments found that while the seminars sponsored by CBP were beneficial, over one-third of the respondents strongly desired more communication with the agency (Governments, 2005). At times the CBP have been unable to find applications, which have resulted in companies needing to repeat the entire arduous application process. Other times applicants have had their applications rejected, and upon inquiry, have found that there was no apparent reason for the rejection and the decision was reversed. While this is better than re-applying, it is still frustrating for the companies and it can be assumed that other applicants may have given up during the process, leading

to lower-than-anticipated adoption rates. Better application processing information systems may be required, with applicants being viewed and handled as customers.

Treatment and General Attitude. Respondents to the survey were not impressed by the treatment and general attitude of the government agencies. A few perceived that there was no change in treatment for drivers before and after they had FAST cards. Related to this, others perceived that the background check qualifying them for the FAST card does little to increased their credibility with customs officials. There is a belief that racial profiling still occurs, despite drivers being FAST approved. A respondent relayed a story of one of his newly approved FAST drivers being detained at the border for four hours, during which time the driver was strip-searched. Harassment at the border was stated to be so common that one driver recently quit the company to pursue a career in domestic freight transportation.

Some respondents had a hard time adjusting to the new paradigm of heightened security. One company, which deals in hazardous materials, has had a long history of inspection compliance for different programs. When it came to applying for C-TPAT, they were disappointed that their good record for compliance did not lend itself to assisting with the approval process. While this may seem like a minor issue that can be overlooked as a barrier, it should not be ignored. It may be that only minor adjustments to the way applications, companies and drivers are approached by CBP and CBSA could go a long way to removing these perceptions and hence this non-trivial border effect.

Media Channels Used. It appears that most respondents receive notice of new ITS programs through the customs website or via e-mail from one of the associations. However, respondents do not seem to be accessing all the information available on the website. This could be due to lack of sufficient time to look for the materials needed. Since the customs newsletter caters to all modes of transportation, it is not very stakeholder specific. The news coming from that source may not be relevant to each mode and, unfortunately, there is nothing in the subscription that allows the company to filter out irrelevant information, which could result in stakeholders discarding the entire document.

Association e-mails seem to be one of the best ways for a company to stay informed about new ITS programs and initiatives. The BC Trucking Association seems to do a good job informing its members of new transportation developments, as well as providing workshops and seminars throughout the province. This keeps the member trucking companies informed; but how do non-members companies keep informed about the different regulations? As trucking firms were contacted using the BCTA membership list, there was no way of ascertaining this information. There is also the issue that companies not happy with the job their association is doing are more than likely to no longer be members.

Only Direct Benefits-Costs to the User Matter. Trucking companies differ greatly in size, yet one business commonality shared by all is the consideration of cost. As with any new initiative, a company examines its costs and benefits only as they pertain to the company.

ITS users perceive few direct benefits associated in the short run, which can also be tied to the fact that adoption rates of these programs are low, resulting in a cycle of people unwilling to participate in these ITS initiatives. There is also no way to ensure compliance from all stakeholders (since most of these are voluntary programs). As a result, companies may not have a strong incentive to participate, especially when they have the potential to lose out to the competitor (at least in the short run). Currently, there are perceived inefficiencies within the programs; these inefficiencies have made trucking companies reluctant to approach their customers and suggest enrollment in programs like C-TPAT. For programs like ACE, some perceive it takes a substantial amount of time to input each shipment, so the paperless entry that was supposed to be easier is perceived as having the opposite effect. Perceptions like these have made companies feel that the cost of voluntary participation is too high. When communicating the merits of a program, all a potential user wants to hear is "what's in it for them."

Marketing ITS and Border Programs

There are many ways to improve the marketing of ITS programs. Marketing has several purposes, one of which to educate and entice the target audience into desiring some product. This section presents strategies that can be used to increase adoption through awareness and targeted marketing.

Recommended Message: Border Efficiency By Being Secure. Current programs are meant to secure cargo and the travelling public while improving border efficiency. Most businesses are aware of the need for tighter security in transportation networks and recognize that programs enacted by the CBP and CBSA focus on security. More effort should be made to emphasize the border efficiency aspect of programs and examine economic benefits that will be derived in the long run.

Most industries, including the freight industry, are driven by profit maximization. Long run benefits are yielded through investments in capital or infrastructure. For the purposes of this paper, infrastructure investments are investments in ITS or regulatory requirements. Paying for a certain program is a long run investment that is expected to minimize long run costs. Most companies cited one of the reasons for increased costs is delay time at the border. One of the most successful ways of capturing an audience is by empathizing with the customer angst. It must also be emphasized that border efficiency cannot be made possible unless most companies participate in and encourage the usage of these programs.

Target Audience. Currently, the stakeholders most affected by ITS border programs are primarily brokers and trucking companies. Of these, it is the trucking industry that is most impacted as that's where the rubber hits the road. If anything is wrong, it generally involves a face-to-face encounter with the trucking company. Brokers and freight forwarders were neither overly concerned nor responsive to the survey. For customs brokers, their primary focus is on border programs. Indeed, the more difficult shippers or trucking companies find the border, the more they refer that part of their business to a broker specialist. North America's freight forwarding industry is dominated by

international shipments. Transborder shipments are an extremely small percentage of that industry's overall business. Hence their lack of response on ITS border issues.

Therefore, at this time, the key target audience for communication, marketing and education regarding ITS border programs is the trucking industry. Further, transborder trucking is far more important to Canadian-based trucking firms than U.S.-based firms – even those located in Border States. This greatly narrows the focus of promotional activities and maximizes the return on resources targeted at supporting the adoption of border programs and reducing the border effect.

Handbook for Trucking Companies. A handbook providing suggestions on how trucking companies can cope with increasing operating costs that are directly related to program participation could be created. Some suggestions in this handbook or brochure include the following:
- Sample contracts that include a section about security surcharges, identifying a maximum allowable increase per year;
- Illustrate the long-run benefits/savings through adapting ITS programs; and
- Hire a summer intern to help with additional tasks, and even the C-TPAT application.

These are only a few suggestions of how trucking companies can remain competitive in the freight market while being a champion for border efficiency and security. Longer term contracts help shippers manage the increasing operating costs that its carriers face, such as fuel and security.

Dedicated Bi-Partisan Transborder Freight Website. Currently each government agency has its own website to inform the public of activities, regulations and other updates. Although many cross-border programs are joint efforts involving both U.S. and Canadian entities, there does not seem to be a joint website between CBP, CBSA and others. This would be an excellent informational site designed to educate stakeholders about bi-national, collaborative regulations and programs between the CBP and CBSA. Further, if this could be done in conjunction with a limited number of industry groups, a wider-range of information could be provided since government agencies are limited in what they can publish.[9] The "quick links" section of the CBP (http://www.cbp.gov/) and CBSA (http://www.cbsa-asfc.gc.ca/menu-e.html) websites are very well done and should continue on this dedicated website. There could also be a link to a separate page suggesting the types of ITS that would be the most appropriate to invest in, perhaps providing a matrix to identify the suitability of the ITS to the company depending on size, industry served, and frequency of cross-border shipping, for example.

A discussion forum or blog area might be able to reduce the amount of time one spends on the phone with representatives from the CBP and CBSA. Users can post their questions and expect a response time from one of the caseworkers or C-TPAT specialists in 24 to 48 hours. The banking and discount brokerage industry have found this particularly effective.

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[9] For example, the U.S. CBP cannot publish a list of FAST certified carriers.

In addition to support from a C-TPAT specialist, other users could reply to engage in peer assistance and act as a support group. However, in order for this to be effective, the interactive discussion forum would require a simple yet comprehensive search function. A wiki could be created for easy upload of information, although this might be better for smaller groups, and run by the industry associations as opposed to the government.[10] An added benefit for government agencies is that it would provide a better gauge of user feelings/views, bringing them closer to the users themselves. For the users, it would be a means of support and a place to go to when they feel frustrated, thereby reducing the number of participants giving up on adopting programs.

Another way of informing the specific stakeholders could be in the creation of a more sophisticated mailing list of the programs and updates. Currently, all e-newsletters are sent to subscribers. By having users complete a questionnaire when they initially subscribe, CBP and CBSA can customize the information to those in specific industries and modes, tailoring the information to the reader, thereby ensuring the likelihood of the information being read. [11] From a marketing perspective, short questionnaires are a good way to collect information about those visiting the site. A simple way to start would be to separate them by mode of transportation. A few years ago, this would all depend on the server used, as this type of functionality was rather complicated and not available on all types of servers. However, in recent years these enhancements have become rather straight-forward.

E-tutorials can also be helpful, especially if they are animated and step-by-step. Many companies have adopted this strategy for training new employees and found it to be effective. Combined with the discussion forum, e-tutorials have the potential to decrease the amount of confusion plaguing the application process, which seems to be a major barrier to compliance of these regulations.

Encourage Adoption through Industry Associations. The survey was an indicator of the influence that industry associations have on their members. Some B.C. trucking companies mentioned their dependence on the BCTA for information regarding changes to regulations and other updates from the CBP and CBSA. Targeting the association ensures a higher participation rate and provides members with a visible means of assistance, adding value to the membership.

Dedicated Phone Line or Call Centre. Recognizing that not all users may be technologically savvy or have a preference for different modes of communication, dedicated phone lines or call centre could be enhanced to control the flow of calls received by the CBP or CBSA by providing answers to general questions, especially if there are automated responses to frequently asked questions. The phone line can also provide a point of contact for companies, as there were frequent complaints about not having

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[10] A wiki is a public, non-proprietary information database that is open to contributions by others.
[11] Filtering mechanisms are not new to government. See, for example, Transport Canada's website e-mail press release system which allows the user a good degree of control over what they want to receive.

someone to talk to when calling about C-TPAT.[12] Also, if a complicated question comes up, it is common for individuals to call, since it is easier to talk through the situation with someone rather than troubleshoot on the dedicated website. To lower costs and maintain security, it is possible to follow the lead of Jet Blue, a U.S. low-cost airline company that in-sources its call centre, saving costs at the same time as creating jobs, and instilling a sense of pride in keeping air travel safe. However, the training needed to staff such a centre and the potential for heightened security may be a challenge for a call centre such as this.

Approach to Educational Programs

Good marketing and communications programs also require an educational component. Indeed, it can be argued that the most successful form of marketing is really about education.

Current Situation. The U.S. CBP invests numerous resources into the BC Trucking Association for the education of B.C. trucking companies. BCTA runs a series of workshops educating members on major programs like ACE, C-TPAT and FAST, even supplying representatives at the workshop to assist with and collect applications. This should make program participation a lot easier for companies. In addition, in order to maintain accuracy, CBP reviews informational e-mails before BCTA sends the correspondence to members.

Education in the form of workshops from CBSA is perceived to be minimal. As many of these are similar or joint programs, it can be argued that CBSA should be assisting with the workshops for both north *and* southbound shipments. At this time, there seems to be a greater demand for educational materials from CBP on U.S. regulations than educational materials from the CBSA on Canadian programs.

Suggested Enhancements. A simple suggestion to assist education is the creation a checklist that could be viewed online and printed out, letting companies know what is needed during the application process or when initially crossing the border with a certain type of good. This could help prevent companies from approaching customs without proper documentation, especially when it is the company's first time transporting the product. This could be available on the dedicated website, association website, or both.

To make the workshops more accessible, CBP and BCTA could consider creating an web cast archive of filmed procedures and workshops, then having those instructions available on the website. Once a workshop was effectively captured on film, the need to hold live workshops could be replaced or the focus altered. This would also provide an opportunity for those not in the larger urban centres an opportunity to educate themselves; these resources would also free up the time for CBP representatives to assist in other areas or with other programs.

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[12] Canada Revenue Agency is a good example of an organization with a comprehensive automated phone system that also includes the ability to communicate with a real person. Substantial improvements have been made to their information service quality over the past few years.

Final Thoughts and Areas Requiring Future Research

This paper just begins to touch on the area of marketing, communicating and educating to increase the adoption of border programs. There is a wide-body of knowledge applying these approaches to the private sector that could be adopted to enhance new government border programs.

Keep Programs "Free" – Companies Don't Capture the Externalities

It was observed from the survey that PAPS was a very popular program with a high participation rate. In the follow up interviews, one of the reasons identified for using the program is the fact that it was a free program. However, another study needs to be conducted to verify whether this is the primary motivator for participation in the program (along with the fact it was easy to use and apply).

In addition, program participation being free is not necessarily optimal. The private sector is willing to invest in programs that provide value to the firm. On the other side, there are savings to government agencies when many of these programs are adopted. How this should be retained, used, or even returned to the private sector is an area for policy and economic discussion. Finally, some of the benefits of these programs, such as reducing the security threat, are externalities. While there is a benefit to North American society as a whole, an individual company participating in a program does not see any direct benefit. Social benefit-cost analysis of these programs is required, and the results applied to pricing for services that includes demand analysis. For example, what is the optimal price to charge for a FAST Driver ID card or a transponder? Answers to questions like this are very fundamental for marketing; however, they are rarely asked nor analyzed for government programs.

Financial Assistance and Incentives

Through research and brainstorming, further investigation is required to determine whether financial assistance and incentives would increase participation rates. For example, both Export Development Canada (EDC) and Business Development Canada (BDC) aim at improving the Canadian economy and international trade. It might be possible for companies to receive interest-free/low interest technology loans from BDC for ITS investment, as the aim of this would be to increase efficiency and transparency of shipments, thereby improving the Canadian – U.S. trade relationship and putting Canada on the forefront of trade technology.

Providing other financial incentives such as grants, rates of Capital Cost Allowance, and income tax deductions could be tools to increase participation in government programs and proactive investment into ITS infrastructure by companies. Further research needs to be conducted in this area. The answers to questions like this are just not known.

Shippers – A Big Challenge Coming Down the Road

There is a strong trend towards "border" security programs moving further out from the physical border and being applied to complete logistics chains to ensure end-to-end security. Today, trucking companies have been the most impacted by "border" changes.

In future, shippers will begin to feel more of the effects associated with these border programs and regulations. Surveyed shippers already enrolled in C-TPAT often perceive the program as bureaucratic and cumbersome. Participants also articulated concerns that program funding provided by CBP is not adequate and enforcement staff needs more training and understanding of the freight industry. However, they did agree that the program goals were worthwhile and could facilitate growth (Schulz, 2006).

Unless the shipper is an active participant in the whole import/export process or is C-TPAT approved, they are likely to be quite unaware of all of the issues regarding ITS and border programs. Concern regarding these issues appears to be minimal among exporters – yet the day is coming when these programs will definitely have an impact on how they operate their business. A proactive tactic is to start informing shippers early so they can prepare for the changes that will occur. This will also assist trucking companies when approaching their customers with either a security surcharge or requests for C-TPAT participation. Even something as broad as increased media attention would be beneficial to trucking companies and brokers because it would affirm the message to their customers.

This is an extremely important future issue. Resistance by the cross-border trucking industry to program change has been substantial; however, it is nothing compared to the challenges that will be faced when the much larger shipper industry becomes more impacted by change.

The Forgotten Component - Reducing Border Effects Through Promotion

Far too often, when one talks about positioning Western Canada as an international trade gateway, or looks at enhancing north-south corridors, the border's impact is viewed as an after thought. This is a critical mistake, as business flows where it is easiest to conduct, and challenges at the Canada-U.S. border – whether they are perceived or real – cause a strong bias towards building just as a gateway to/from Canada. When your market is one-tenth the size of a neighboring country, this is a damaging economic mistake. If Western Canada's gateway and corridor development is to maximize its potential, then it must position as a successful gateway between the entire North American market and overseas markets. This means the movement of goods across the Canada-U.S. border is arguable the most important component of any gateway or corridor development strategy.

Security concerns post-9/11 have driven significant change at that border. Fortunately, new technologies, investments, training and approaches have found ways that both security and efficiency can be enhanced at the same time. It is important to remember that if efficiency declines because of security responses to terrorist acts, the social-economic cost of those terrorist activities continues to climb daily.

Intelligent transportation systems – perhaps broadly defined – are at the heart of many new border programs designed to enhance both the security and efficiency of international freight movements. Much work as been done in this area from a technological, deployment and other perspectives. Almost no research has been done in the areas of how to best market, communicate and educate users about these new programs. Since the

adoption of most of these programs is voluntary, and there is a trend towards including companies along the entire logistics chain in security matters, this is a substantial oversight.

There is an opportunity now to address this situation by focusing on the cross-border trucking industry. From this, lessons will be learned that can be applied to the much greater challenge of working with shippers. No Western Canadian gateway positioning, nor corridor development, initiative is complete unless this oversight is addressed.

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For a more complete list of references, please refer to the major studies conducted by BITSAFS, which can be found at www.FreightSecurity.ca