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Designing e-commerce cross-border distribution networks for small and medium-size enterprises incorporating Canadian and U.S. trade incentive programs

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ABSTRACT

E-commerce sales are growing more rapidly than non-e-commerce sales. This creates a great opportunity for small and medium sized companies to find and develop new customers in markets outside their domestic ones. However, there are substantial barriers to doing business across international borders — including differences in customs and duty regimes and tax laws. Some federal governments are trying to alleviate the impact of such barriers by providing government programs such as duty free zones for the import and export of products. However, there remain critical barriers that government programs cannot overcome — for example, exchange rate fluctuations. This paper explores the potential for e-commerce transactions across the borders of one of the most vibrant bilateral commercial markets in the world — the one between Canada and the United States of America. The federal governments of both countries have programs in place designed to facilitate cross-border business. This paper examines those programs to explore the question of whether or not participation in such programs can actually assist small and medium sized firms in overcoming the barriers to cross-border e-commerce transactions. Implications for company decision makers and government policy makers in Canada and the US, with application to other cross-border regions, are discussed.

1. Introduction

This paper explores the opportunities for small and medium size e-commerce companies to leverage the Canadian and U.S. government programs put in place to support and encourage cross-border trade. Small and medium size (SME) e-commerce companies need a closed-loop delivery network designed to meet the initial delivery terms agreed upon by the customer as well as to be able to satisfy the pickup and return conditions that were part of the initial sale. This paper identifies if these government programs provide e-commerce SME's with additional capabilities for reducing the delivery costs, delivery times or can simply make the process easier and therefore more manageable.

The importance of e-commerce transactions to companies in Canada and the U.S. cannot be overstated. E-commerce sales have grown dramatically faster than non-e-commerce sales. Diane Brisebois, CEO of the Retail Council of Canada has been quoted as saying she has never seen anything so disruptive (Webster, 2014). U.S. Census bureau data indicates that between the years 2011 and 2012 the change in the value for e-commerce shipments rose 2.1 times faster than the total for all manufacturer sales, 1.1 times faster than the total for all merchant wholesale sales and 2.9 times faster than the total for all retail sales (U.S. Census Bureau, 2014). A similar pattern of growth in e-commerce sales is occurring within Canada where e-commerce sales grew 5.6 times faster than total Canadian retail sales from 2011 to 2012 (Statistics Canada, 2014). There are also segments of more rapid e-commerce growth. According to research by Internet Retailer their Top 500 largest “web merchants” in both the United States and Canada grew at a faster rate than the overall e-commerce growth rate (Brohan, 2015). One of the more interesting statistics provided by the U.S. Census Bureau is the penetration of e-commerce as a sales channel. E-commerce accounted for 51.9% of all sales for U.S. manufacturers, 26.4% of all revenue for merchant wholesalers and 5.2% of total retail sales (U.S. Census Bureau, 2015). Gagliordi (2015) also highlights the large volume of U.S. business-to-business sales accounted for by e-commerce and notes that it is significantly larger than business-to-consumer e-commerce sales.

Canada and the United States of America are two of the world's largest trading partners and e-commerce transactions are part of their cross-border trade. Research by Multichannel Merchant indicates that 58.5% of U.S.-based e-commerce sellers that sell outside the U.S. sell into Canada, the most popular foreign country (O'Brien, 2015). Selling by Canadian e-commerce companies, especially small and medium size enterprises (SME), is still limited. 56% of Canadian SME's find the costs involved in setting up and managing e-commerce capabilities does not justify the investment which is a challenging problem given

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that Canada has a high number of SMEs (Sweet, 2012). Therefore while Canadians are among the most active cross-border online buyers with 90% indicating they purchase cross-border (Forrester Research Inc., 2014), Canadian businesses are not as active in pursuing e-commerce business as their U.S. counterparts.

While the potential for cross-border e-commerce between Canadian and American businesses and customers is substantial, there still exist substantial barriers to the full realization of this market potential. Households and businesses both have revealed in a number of surveys that shipping costs and delivery options are key factors in their purchase decisions (Lewis, 2006; United Parcel Service of America, Inc., 2013, 2014). The result of a recent study by Forrester highlighted that the biggest challenge for SME's in global e-commerce is dealing with the logistics of customer deliveries (Forrester Research Inc., 2014). The logistics aspects of cross-border e-commerce are very important to customers and at the same time are very challenging for small and medium sized e-commerce companies. Merchandise prices, shipping fees to charge if any, and delivery options need to be posted on the e-commerce sites for all prospective customers to review before ordering. These questions need to be answered from the point in time an e-commerce company decides to take responsibility for delivery of orders for cross-border customers. A further question is if taking advantage of government programs that support cross-border trade can help companies manage the cost associated with each of these factors more effectively.

While Canadian and U.S. customers of e-commerce have made it clear that shipping costs are the most important concern regarding delivery (Parry, 2015), the major common carriers that deliver e-commerce orders have raised their rates and costs significantly. In 2015 UPS and FEDEX increased their general rates to the highest levels ever, broadened inclusion of all packages to potential dimensional weight pricing, and increased their fuel surcharges (Berman, 2015). They recognized that e-commerce shippers were often using boxes that were much larger than necessary to ship customer orders. One consulting firms estimates the typical e-commerce package is 40% air and filler (Ampuja, 2015). The carrier's goal in expanding the dimensional weight program was to get e-commerce shippers to use smaller boxes so they could achieve higher utilization rates on their transportation assets. The net result to date is a bit surprising in that the increases in shipping costs due to shippers using packages that are larger than necessary are being passed along to customers or are being absorbed by shippers (Trebilcock, 2015). In addition to the shipping costs, the question of who is going to pay for any sales taxes, duties or tariffs that are due to the government of the country in which the customer resides needs to be answered. Clearing the U.S. Canada border can be a challenge for any e-commerce company even one as popular as Zappos.com (Vancouver Sun, 2011).

The rapid growth of e-commerce is even impacting some national postal operators (NPO's). Canada Post with its B2B parcel division Purolator and its technology company SCI is transforming itself into an e-commerce logistics company. One of the first major steps along this route was to begin to discontinue door-to-door residential mail delivery service and to replace it with community mailboxes while adding new facilities designed to support parcel services (Webster, 2014). Global parcel carriers such as FEDEX and UPS have teamed up with the U.S. Postal Service (USPS) for last-mile delivery services with their Smartpost and Surepost services. The USPS in particular is very interested in not only last-mile order deliveries but also in picking-up merchandise returns (Steiner, 2015).

Realizing the importance of cross-border business and the impact of the barriers, the federal governments in both countries have implemented programs and incentives to facilitate cross-border business. While Canada and the United States are members of the North American Free Trade Agreement they are not in a customs union nor are they in a currency union. Therefore, they may have differing duty schedules for imported goods. Many of the trade programs developed by both counties are designed to help companies manage their duty and tariff obligations. In addition, the two countries do not have a common currency. Consequently, exchange rates can also play a role in the decisions on engaging in cross-border business. Finally after the terrorism event of September 11, 2001, the U.S. has implemented a number of programs to heighten U.S. border security that includes inspections of commercial goods as well as checks on people entering into the country. While the two countries are active participants in the North American Free Trade Agreement, not all products are covered under the agreement and moving freight across this border has security challenges in addition to traditional inspections by Customs officials. Clearing the Canada/U.S. border can impact the delivery costs and schedules.

This paper first provides a very brief review of the relevant literature on consumer preferences, delivery network characteristics, inventory management, returns, and closed-loop supply chains. The paper then addresses the main focus of the paper and that is to identify if participation in any of the in duty deferral and border-crossing programs available from the governments of Canada and the United States can help address merchandise costs, shipping costs, or make border clearance easier for cross-border e-commerce. The authors then go on to identify four strategic decisions that managers need to make when planning a cross-border delivery network and suggest how two recent models published in the academic literature could be modified to be adapted for use in developing a closed-loop, cross-border, e-commerce delivery network. The models themselves already exist in other published literature, only the factors that could be modified are discussed in this paper. The paper ends with four specific recommendations for business practice and public policy recommendations for government policy makers and companies in other parts of the world.

2. Literature review

2.1. Consumer preferences

Cross-border shopping via e-commerce is growing rapidly and is receiving more study by companies actively engaged in supporting international transactions A recent survey of Global Acquirers, Merchant Services Providers, Payment Services Providers and online merchants indicated the largest percentage of cross-border “Power Shoppers” (above average annual spending) reside in Canada, 60% of Canadian online shoppers buy from U.S. e-commerce retailers, and that they tend to place smaller orders but order more frequently (van de Sande, 2013). O'Brien (2014) quotes the Director of International Strategy at Growing Global as stating the reason Canadians are shopping online in large numbers is because they either can't get the items from domestic retailers or because they can get a better price. This same director quoted by O'Brien also stated that the lack of a clear returns policy is a major driver for shopping cart abandonment by Canadians and the sellers that offer free shipping achieve a 69% lift in conversions. A study sponsored by Industry Canada (Saipe, 2013) highlighted the importance of logistics costs in e-commerce and the significant differences between logistics costs in the U.S. and Canada. This report also highlights the trend toward free delivery and free returns that is already common in the U.S. and emerging in Canada. The need to offer free shipping for higher response rates and for competitive parity or competitive advantage is an important consideration in cross-border delivery network design. Any differences in parcel rates between domestic and international shipments will impact the final price paid by customers. This same report by Industry Canada also highlights that tariff differences between the U.S. and Canada can also be a challenge for Canadian retailers especially on goods imported from China.

2.2. Shipping costs and delivery schedules

Shipping costs are a primary factor in e-commerce purchase decisions by all customers. E-commerce retailers (B2C) have indicated that they receive a 10% to 20% increase in sales if they offer free shipping