

ESTEY CENTRE FOR LAW AND ECONOMICS IN INTERNATIONAL TRADE

**INTERNATIONAL E-COMMERCE:
A SOLUTION TO PENETRATING NICHE
MARKETS FOR FOOD?**

Prepared in cooperation with:

**The Specialized Livestock Marketing Research Group,
Department of Agricultural Economics, University of Saskatchewan**

November 2001

**Prepared by Dr. Jill E. Hobbs, Associate, Shari L Boyd, Research Officer and
Dr. William A. Kerr, Senior Associate
Estey Centre for Law and Economics in International Trade**

INTERNATIONAL E-COMMERCE: A SOLUTION TO PENETRATING NICHE MARKETS FOR FOOD?

Executive Summary

Electronic commerce is changing the way business transactions occur and is becoming an increasingly important part of the marketing strategies of food companies. This study explores the opportunities and constraints associated with e-commerce marketing channels for food, focusing on "B-2-C" (business to consumer) e-commerce. E-commerce marketing channels provide a means by which specialty products in small domestic markets can gain access to a larger number of market niches in international markets. However, customs fee structures represent a major barrier to the growth of international e-commerce.

Potential benefits of e-commerce include accessing dispersed geographic markets, and a closer relationship between the supplier and the final consumer, thereby facilitating improved information flow and a reduced reliance on middlemen. Key barriers remain payment security concerns, delivery problems and high fixed customs and inspection fees for international transactions.

An Internet search was conducted to identify websites marketing food online. Ninety-six websites were identified, selling a wide range of food products, both perishable and non-perishable. Delivery options varied, with couriers being more popular for non-perishable goods, while personal pick-up was more important for perishables. A range of payment options were offered, with online payment being the most important, despite lingering payment security concerns among some consumers. Only about 15 percent of the websites identified had specific provision for international sales. This is consistent with the findings of other researchers.

A follow-up telephone survey was conducted with some of the firms identified in the web search. The relative importance and performance of seven aspects of the firms' e-commerce marketing systems were evaluated. International sales emerged strikingly as the area in need of the most improvement.

Consumer liability issues, language and currency differences and customs fees and regulations are important barriers to international e-business. Most customs and inspection fees have a significant fixed component, such that average costs fall as the shipment size increases. Customs fees per pound were compared for typical regular and e-commerce sized shipments of four products: beef, apples, elk velvet antler and pasta. Small e-commerce sized consumer shipments are placed at a serious competitive disadvantage relative to traditional container-sized shipments.

The WTO Declaration on Global Electronic Commerce in May 1998 stated that customs duties would be addressed at the Seattle meeting in 2000, however, no agreement was reached. The lack of an agreement is a factor preventing the expansion of e-commerce into international markets. The issue is particularly pertinent for firms in emerging niche market sectors with small domestic market potential. Firms in North America are disadvantaged relative to those in the European Union where internal customs duties have been abolished and products flow freely across national borders within the customs union. A policy imperative for those charged with negotiating reciprocal custom fee regulations should be to address this barrier to international e-commerce, beginning with barriers between the NAFTA countries.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1. INTRODUCTION	1
2. THE GROWTH OF E-COMMERCE.....	3
2.1 POTENTIAL BENEFITS OF E-COMMERCE.....	3
2.2 BARRIERS TO THE ADOPTION OF E-COMMERCE	8
3. MARKETING FOOD ON-LINE: AN INTERNET SEARCH.....	9
3.1 SITES ALLOWING INTERNATIONAL SHIPMENT.....	10
3.2 PRODUCTS.....	12
3.3 PACKAGING FORM.....	12
3.4 PAYMENT OPTIONS	12
3.5 DELIVERY OPTIONS.....	14
4. SURVEY OF FOOD COMPANIES USING E-COMMERCE	18
4.1 SURVEY METHODOLOGY.....	18
4.2 SURVEY RESULTS.....	20
5. MARKETING IMPLICATIONS.....	24
5.1. E-COMMERCE FOR NICHE MARKET AGRICULTURAL PRODUCTS?	26
6. BARRIERS TO INTERNATIONAL E-BUSINESS.....	27
6.1 CONSUMER LIABILITY	27
2.2 LANGUAGE AND CURRENCY DIFFERENCES	28
6.3 CUSTOMS AND INSPECTIONS FEES.....	29
7. COMPARISON OF CUSTOMS AND INSPECTIONS FEES.....	31
7.1 CUSTOMS COMPARISON METHODOLOGY	31
7.2 CUSTOMS COMPARISON RESULTS	32
7.3 EFFECTS OF CUSTOMS FEES ON INTERNATIONAL E-COMMERCE.....	33
8. THE NEED FOR NEW TRADE POLICIES.....	34
9. REFERENCES	37
APPENDIX A: SURVEY INSTRUMENT	39
APPENDIX B: CUSTOMS FEES CALCULATIONS.....	44

LIST OF FIGURES

Figure 1: Online Food Websites by Country	11
Figure 2: Methods of Payment	13
Figure 3: Delivery Methods For Fresh Products.....	15
Figure 4: Delivery Methods For Non-Perishable Products.....	15
Figure 5: Generic Importance-Performance Graph	19
Figure 6: Importance-Performance Assessment of E-commerce Attributes.....	21

LIST OF TABLES

Table 1: Customs Fees For Exporting Products from Canada to the US.....	32
Table B.1: Breakdown of Customs Fees for 5oz. Top Sirloin Beef Steaks	45
Table B.2: Breakdown of Customs Fees for Macintosh Apples.....	46
Table B.3: Breakdown of Customs Fees for Pure Elk Antler Capsules.....	47
Table B.4: Breakdown of Customs Fees for Dry Pasta	45

INTERNATIONAL E-COMMERCE:

A SOLUTION TO PENETRATING NICHE MARKETS FOR FOOD?¹

1. Introduction

Trade in the 21st century will be driven by e-commerce. Just as the industrial revolution transformed world trade at the turn of the 20th century, electronic commerce holds the promise of transforming international trade as we enter the new millennium (Congressman James Kolbe, 1999).

Electronic commerce – the marketing and distribution of products via telecommunications devices, namely the Internet – is changing the way business transactions occur and is becoming an increasingly important part of the marketing strategies of food companies. This technology provides agri-food firms, from small, family-owned enterprises to large corporations, with new opportunities and challenges. In particular, it provides the basis for allowing access to global markets for both consumers and firms. Traditional constraints on commercial activity can be reduced as a result of e-commerce. With proper implementation, e-commerce can allow firms to market their products to a broader range of customers, with the potential to increase sales. Some existing customers may also choose to purchase through e-commerce channels if they find them more convenient than traditional methods of shopping. There is also the risk that failing to offer an e-commerce option, or putting in place a hasty, poorly thought out system, could cause a firm to lose existing customers. E-commerce systems can be expected to become important competitive battlegrounds for agri-food firms over the next few years.

The objective of this study is to explore the opportunities and problems associated with e-commerce marketing channels for food, focusing on "B-2-C" (business to consumer) e-commerce. It explores the possibility of using e-commerce channels to target niche markets, in particular, the opportunities for specialty agricultural products produced in western Canada, such as bison, wild boar and ostrich. E-commerce marketing channels may provide a means by which these specialty products can gain access to a larger number of market niches by being able to reach customers in international markets. This potential is important where domestic market potential is limited and industries must rely on access to export markets for long-term sustainability. Barriers to international e-commerce in the form of customs fee structures are explored.

The paper begins by discussing trends in e-commerce adoption, together with the potential benefits from and barriers to e-commerce. Section 2 discusses the development of e-commerce marketing channels. Section 3 presents the results of a Web-search of food companies selling on-line. This was followed up by an in-depth telephone survey of several companies, discussed in Sections 4 and 5. High fixed per unit customs fees were identified as a key barrier to successful international e-commerce. Sections 6 and 7 of the paper present an analysis of this customs barrier for four representative food products. Section 8 concludes with recommendations for changes to international trade policy to facilitate the growth of international e-commerce.

¹ The authors wish to acknowledge the research assistance of Laressa Chorel in undertaking this study. The Specialised Livestock Marketing Research Group is funded by the Canada-Saskatchewan Agri-Food Innovation Fund.

2. The Growth of E-Commerce

2.1 Potential Benefits of E-Commerce

While encompassing a broad range of applications and technologies, e-commerce is essentially the exchange of goods between two or more parties via the Internet (Covino and Porro, 2000). Mann et al (2000) explain that

Electronic commerce creates new markets in time, space and information where previously transaction and coordination costs were prohibitively high (p.11).

The convenience of such a system is easy to appreciate. E-commerce enables consumers to browse the Internet, order goods online, pay for them electronically and receive direct delivery. Consumers also benefit from the extended hours in which they have the option to browse and complete transactions, as well as the convenience of home delivery.

Proximity to a vast selection of products is now a matter of the distance to a computer with an Internet connection rather than the distance to the physical food store. E-commerce can be especially advantageous when the marketplace for a product is located some distance from where the product is produced. Consumers can gain access to a product previously unavailable to them due to location and time constraints.

Benefits are also apparent for the companies offering e-commerce. Firms are able to more easily make potential customers aware of their products when in the past this would have entailed the higher marketing costs associated with long distances or a geographically dispersed potential customer base. By marketing and selling products over the Internet, the potential exists for increased sales with relatively low transaction costs. Through extending the customer base, new niche markets can be discovered which might otherwise have remained hidden.

The Internet facilitates lower cost information flows from customers to suppliers – a key advantage over conventional supply chains. Under conventional systems, firms may expend large amounts of time and capital in marketing their products and again, in acquiring feedback about the products sold. The relationship with the customer is usually indirect (e.g. through a downstream distributor or retailer), with the concomitant risk that the supplier may not receive accurate or timely customer feedback. An e-commerce system, with a web page and an online customer feedback form facilitates a more direct link between the supplier and its consumers. Further, the Internet allows for information to flow directly from the customer to the supplier quickly and inexpensively. In contrast, when using a traditional supply chain there may be a considerable time lag between when a customer voices a complaint regarding a product and when the supplier is made aware of the problem. This can result in lost sales due to the delay in relaying the information or if the supplier does not receive the information at all. Thus, there are considerable potential information advantages to firms arising from e-commerce marketing channels. Of course, obtaining the information is only the first step – the firm must still have in place internal mechanisms with which to analyse and respond to customer feedback.

E-commerce can be a flexible, relatively low cost component of a firm's marketing strategy. When tapping into new niche markets, firms can gain a better understanding of their customers and gear marketing strategies to suit individual groups. For example, suppose a company located in western Canada is selling bison meat online and discovers that there is a health-conscious group of consumers in Southern California. Bison is considered lower in fat than traditional red meats (Armstrong et al., 1998). A simple strategy to target this health-conscious group could be to post nutrition facts and

benefits in a more prominent position on the company's website. The idea of customising particular marketing strategies to specific groups is not a new idea, but can be done more cost effectively using e-commerce.

Online selling also allows firms to cut out the 'middleman' to capture a larger proportion of the value added available from a supply chain. The online channel enables companies to accomplish this without sacrificing the important operations normally carried out by these other firms. Middlemen in supply chains are typically engaged in locating buyers, packaging or repackaging products and shipping goods to a number of retail outlets. With e-commerce, a firm may be able to perform some of these operations internally, thereby further enabling closer relationships with final consumers. If the production and transaction costs of carrying out an activity internally are less than the costs of transacting through the marketplace, then *ceteris paribus* that activity will be carried out within the firm². E-commerce changes the relative transaction costs of using the market versus co-ordinating a transaction internally. The closer relationship between a firm and its final customers improves the flow of information along the supply chain and, as pointed out above, can be important in gaining customer feedback on many issues such as product quality or the product variety offered. By cutting out middlemen, firms also have a greater assurance that their product is reaching the customers in good condition, this reduces monitoring and enforcement transaction costs for the firm.

Eliminating middlemen is not always desirable if the firm does not have the capabilities or resources to perform the roles undertaken by middlemen, or could only do

² This fundamental insight was first introduced by Coase (1937) and subsequently developed into a theory of Transaction Cost Economics by, among others, Oliver Williamson (1975; 1986). For a discussion of the application of Transaction Cost Economics to supply chain issues, see Hobbs (1996).

so less efficiently and at a higher cost. These roles could be value-added processing, packaging, organising distribution or customer service. Clearly, there are limits to the 'boundary' of the firm in terms of the activities it undertakes. These limits include the transaction costs of organising the activity internally versus through a market, which are constrained by the capabilities and resource base of the firm (Coase, 1937; Hodgson, 1998; Langlois and Foss, 1997). E-commerce may enable the firm to expand its boundaries downstream in the supply chain until transaction cost, resource and capability constraints are encountered.

When supply chain infrastructure is not fully developed, e-commerce technologies offer a low cost method to 'bridge the gap' between the producer and the final consumer. When developing new supply chains, much of the delay arises from the cost and the time it takes to set up the infrastructure. Setting up an Internet site is much less costly and time consuming than constructing several warehouses and retail outlets, however distribution links must still be established to facilitate delivery of products from the firm to its customers. New businesses often encounter difficulties financing the capital costs of supply chain development. Internet sites are relatively easy to expand, improve and update as the company grows.

For new companies located in remote locations, building a new customer base is often difficult. This is made even more complex when the product being produced is a specialty product that is not targeted at the mass consumer market, as is the case for specialised livestock products produced in western Canada³. The potential customer base

³ With low returns from traditional agricultural commodities, there has been increased interest in western Canada in diversifying into "specialised" livestock. Examples include bison, wild boar, ostrich, goat, elk (venison, velvet antler). A particular challenge, however, has been building supply chain relationships and

for these products represents small niche markets covering large geographic areas. Specialised livestock products do not appeal to the mass consumer market partly because they are more costly than their close substitutes such as beef or pork. They appeal to some consumers for a variety of reasons including nutrition, novelty and taste (Sanderson, 2001). A large consumer segment for specialised livestock products may be individuals who are more health conscious and earn higher than average incomes. This description does not characterise a significant proportion of the population on the prairies, which is the major production area for these products. Thus, it is important to be able to market to individuals that fit this profile over a wide geographic area. Despite the potential appeal of these products to specific consumer segments, if a significant number of individuals cannot be accessed and viable markets developed, the specialised livestock industry cannot grow and contribute to the diversification of western Canada's rural economy. A relevant question therefore, is whether e-commerce offers a means by which firms in these industries can access a wider market, including international markets.

Given the potential benefits from e-commerce, it perhaps no surprise that its use has grown so rapidly. The rapid development of e-commerce, both for marketing to final consumers (B-2-C) and business to business (B-2-B) management of the supply chain and the fast-moving pace of the technology, has made it difficult to form accurate forecasts of how e-commerce will impact business in the future. It is estimated that by 2005, e-commerce revenues in the United States could surpass six trillion US dollars, however, other estimates range from ten billion to 1.5 trillion US dollars (Mann et al., 2000).

identifying viable markets for these products. For further discussion of these challenges see Hobbs et al. (2000) and Hobbs and Sanderson (2001).

Growth is also occurring in other countries. Although estimates of e-commerce revenues are often of a lower absolute magnitude compared with the US, in many cases growth is occurring at a much faster rate. In China, e-commerce revenues are forecasted to grow from US\$ 11.7 million in 1998 to US\$ 1.9 billion in 2002. Another region experiencing growth in e-commerce is Latin America, which reached US\$ 167 million by 1998 and is expected to reach eight billion US dollars in 2003. In South Africa, e-commerce revenues were estimated at over one billion US dollars in 1999. Canadian e-commerce revenues in 1998 were estimated to be Cdn\$28 million (approximately US\$18 million) and are expected to climb to Cdn\$ 155 billion (US\$98 billion) by 2003 (Canadian Business, 2000).

With such rapid growth, some forecasters predict that companies who do not adopt the technology in the near future will lose their competitive advantage, with negative consequences for market share and profitability. Although there appear to be many benefits from e-commerce, it is by no means a panacea. Significant barriers exist to the successful implementation of e-commerce marketing strategies by firms. We now turn to a consideration of these barriers.

2.2 Barriers to the Adoption of E-Commerce

Barriers to the adoption of e-commerce affect both the firms implementing e-commerce into their marketing strategies and the consumers wishing to take advantage of the technology. Security issues, delivery problems and assurance of product quality all hamper the implementation of e-commerce marketing strategies. Consumer concerns over the security of using a credit card to purchase products online remains an important barrier.

Delivery systems are also a crucial component of an e-commerce marketing channel, affecting timeliness of delivery as well as product handling and deterioration during transit. Many firms rely on other companies to deliver their products (i.e. UPS or Fed-Ex), thus they do not have direct control of the transportation of their products. This could present a problem if the delivery company does not offer the expected quality of service. The supplier incurs transaction costs in identifying reliable delivery companies, monitoring their performance and seeking redress should the delivery company abrogate a contractual commitment, such as failing to deliver a product on time.

Another problem with e-commerce as a marketing channel, particularly for food, is the inability of consumers to physically touch, smell and examine the products. As consumers cannot use visual inspection to identify and evaluate the relevant quality characteristics in making a purchase decision, firms must find other means of signalling the quality of the product to consumers, and assuring them of its integrity.

3. Marketing Food On-Line: An Internet Search

To gather information on the use of e-commerce to market food products, an Internet search was carried out in the summer of 2000. The goal was to locate websites that sold food products either directly from a food producer, processor or retailer, or via a 'virtual' grocery store offering a range of food products from different suppliers. Having located the websites, the objective was to discover what food products were being sold online, the types of companies involved, where they are located and how they operate their e-commerce supply chain. Of particular interest was the use of e-commerce to sell niche market agricultural products.

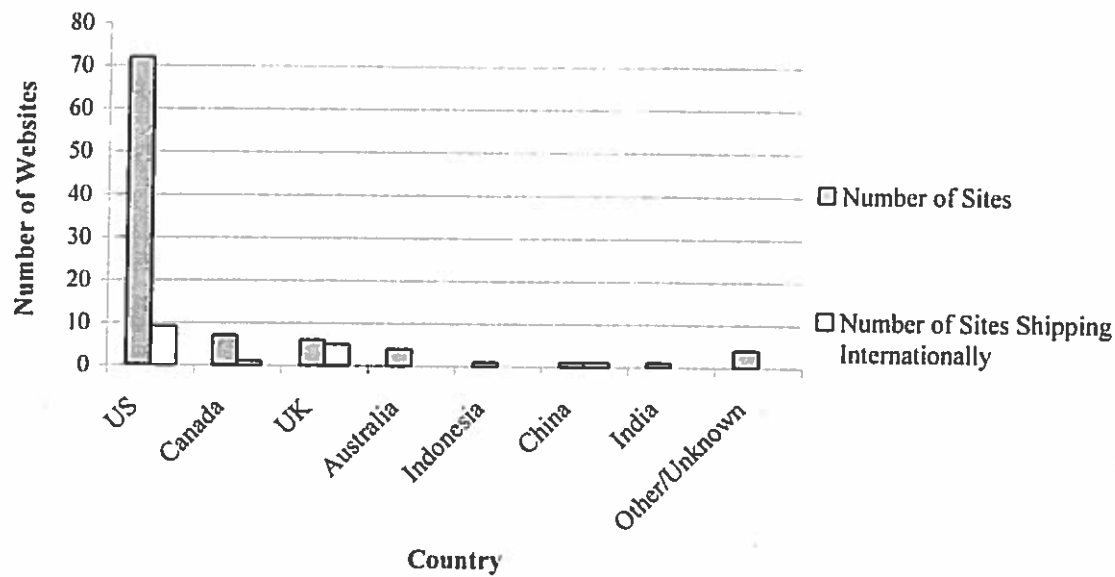
The Internet search was conducted using a variety of keywords and using the major Internet search engines available in summer 2000. Additional keywords related to the specialised livestock sector (such as bison, wild boar, ostrich, etc.) were also used to gather information on these niche markets. Ninety-six company websites were found. This is not intended as a comprehensive listing of all online food marketing websites⁴, however efforts were made to ensure that the search was as inclusive as possible. As such the results of the Internet search enable us to build a fairly comprehensive picture of web-based food marketing activities. The firms identified in the search were based in a number of different countries (see Figure 1), including the United States, Canada, the United Kingdom, Australia, Indonesia, China and India. The United States hosted a majority (seventy-five percent) of the sites found in the search, with the other six countries making up the remainder.

3.1 Sites Allowing International Shipment

It is apparent from Figure 1 that very few online food marketing sites sold products internationally. The search revealed that only sixteen of the ninety-six online sites sold products in other countries. Again, the US dominated this category, with half of the international selling sites being based in US, although this is not surprising given the dominance of US sites in the sample. Of more interest is the *proportion* of sites in the US allowing international sales, which was small (8 percent) compared to the UK (85 percent) and China (100 percent). The low proportion of sites in the US may reflect the large internal US market, or it may indicate the existence of trade barriers to e-commerce

⁴ A particular constraint, for example, was that all searches were conducted in English.

Figure 1: Online Food Websites by Country



sales. The relatively large proportion of UK sites allowing international shipment of products could be the result of the absence of internal trade barriers among members of the European Union. The high proportion of Chinese sites allowing international shipment may be an indication of the premium Chinese firms attach to hard currency sales given China's restrictions on access to foreign currency. Canada, a trade dependent economy and a member of the North American Free Trade Agreement (NAFTA), has a low proportion of sites with international sales capability. This may simply reflect a more cautious Canadian business ethic, however given the similarly low proportion in the U.S – Canada's largest NAFTA partner, it was apparent that an investigation of "hidden" barriers to trade through e-commerce was warranted. This issue is explored further in sections 6 and 7.

3.2 Products

The complexity of the websites ranged from the very simple, offering only product information with no direct online ordering, to complete virtual stores offering multiple products and advanced online payment systems. An important objective was to determine whether perishable food products are being sold electronically, and this proved to be the case for many companies. Perishable products included a variety of fruits, vegetables, dairy products and meats. The most common grouping of foods sold online were dairy products, dry goods, fish, fruit, meat and vegetables. Almost half of the search results listed all of these products as being available for purchase. The other half of the sites indicated that the companies offered some of these products, but not all of them. There were eight sites selling one or more specialty meat products such as bison, elk, ostrich, emu, wild boar and venison. A variety of specialty food products including, Chinese tea and other culture-related foods were also available.

3.3 Packaging Form

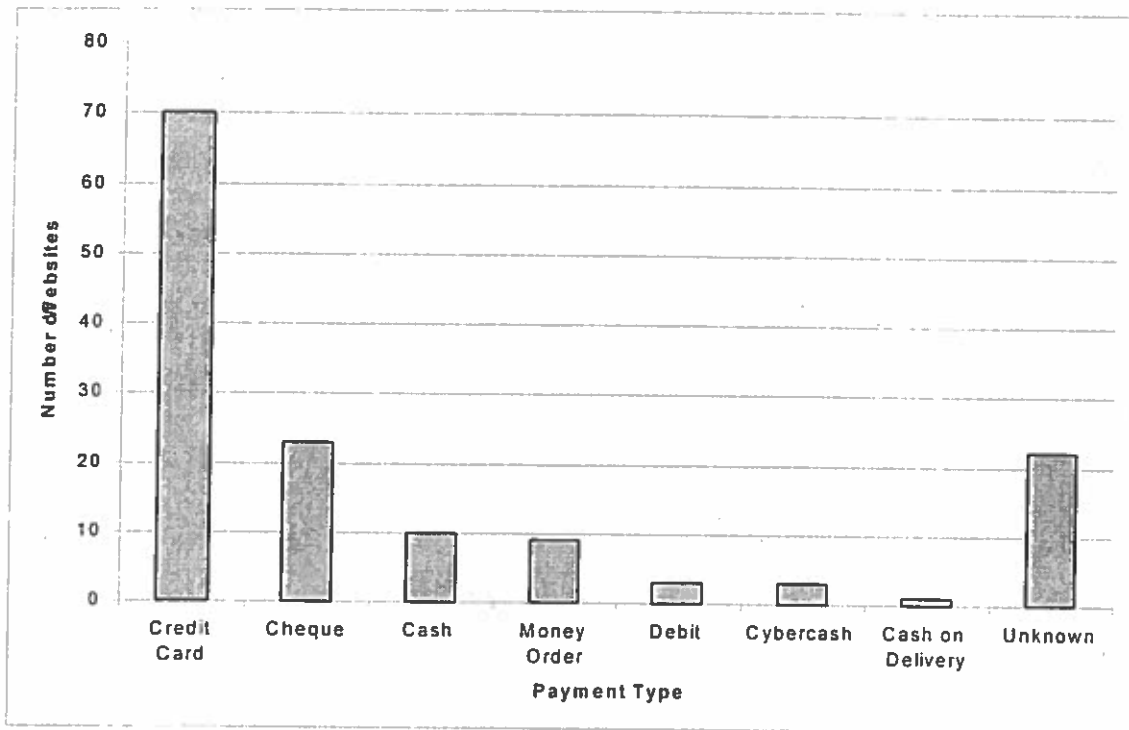
E-commerce supply chains use a wide-ranging array of packaging forms. A majority of the companies located in the Internet search sold many different types of products and, therefore, offered a variety of packaging. Packaging ranged across a variety of combinations of reusable packages including insulated coolers, dry ice packs, gel packs and Styrofoam containers to ensure damage free products.

3.4 Payment Options

Firms also offered many different payment options within the two main categories of offline and online payments. Some firms specified only online or only offline

payment, while others allowed both. Figure 2 illustrates the extent to which different payment options were used, with some websites offering multiple payment options.

Figure 2: Methods of Payment



The offline payment methods are comparable to those used at most retail outlets, such as cash, credit cards, debit cards and cheques, and are usually used in conjunction with customer pick-up systems. Since some consumers are still wary of paying for products over the Internet, offline payment systems provide the security assurance of ordering the necessary food items online, but paying for them offline. The process of offline payment can be of two forms. The customer may pick up the products at the retail outlet and pay for the items on pick-up. Alternatively, the products are delivered directly to the customer, in which case the customer either pays upon arrival of the products, or may be required to pay before the groceries are sent. Offline payment upon personal delivery ranged from cash, to credit cards, or even food stamps

Some of the online payment systems are quite unique and require advanced technology and security. Customers can pay by entering a credit card number, using pre-paid cyber cash or completing an electronic cheque transfer. As can be seen in Figure 2, credit card payment is the most widely offered mechanism (73 percent of sites offered credit card payments) followed by cheques at 24 percent.

Over eighty-five percent of the firms examined have a website providing a means by which customers can browse through and add items to a virtual shopping cart. Some of the sites also perform more advanced operations such as keeping a running total of the items placed in the cart, thus allowing the customer to budget his/her spending more easily.

3.5 Delivery Options

As e-commerce expands further, the technology and other components of the system will have to grow with it. While ordering and purchasing occurs electronically, the delivery methods still take place through conventional channels. This puts a significant demand on the speed and accuracy of the delivery systems. There were three main delivery options, with many variations of each. The options consisted of delivery by courier, personal delivery and personal pick-up. The most popular delivery method (used by 42 percent of companies) was a courier service. However, the type product being delivered influenced the degree to which courier services were used.

A comparison of delivery methods for fresh (perishable) versus non-perishable products reveals quite different profiles, as shown in Figures 3 and 4.

Figure 3: Delivery Methods For Fresh Products

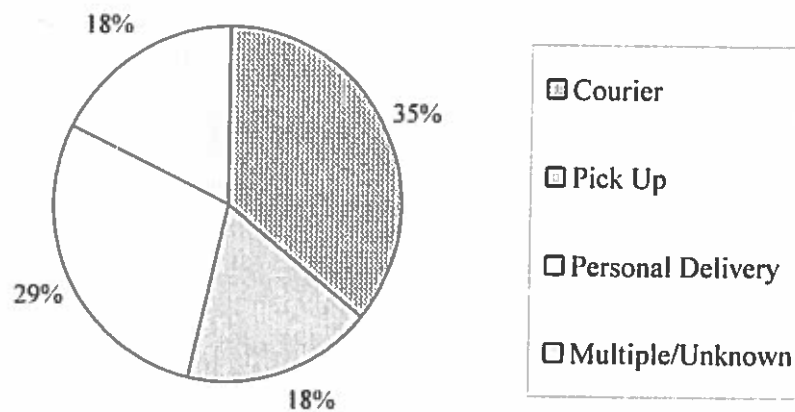
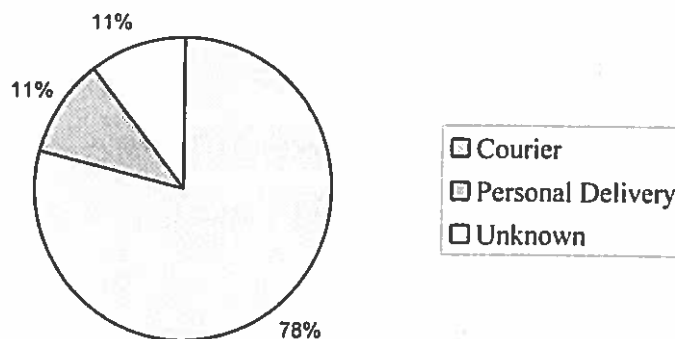


Figure 4: Delivery Methods For Non-Perishable Products



In the case of non-perishables, courier services were by far the dominant delivery method, with 78 percent of sites using this method, compared to only 35 percent for perishable goods. Personal delivery was relatively more common for sites selling

perishable goods, at 29 percent compared with 11 percent of non-perishable good websites. None of the websites selling only non-perishable products offered customer pick-up, while 18 percent of fresh product sites incorporated this delivery option. The remaining eighteen percent of fresh product sites either listed multiple delivery methods or the delivery method was not specified.

The large difference between fresh versus non-perishable product delivery methods is important. First, food companies may not find couriers to be properly equipped to deliver fresh products. Since the quality of fresh products is greatly impacted by handling and storage during transport, couriers that do not have the proper equipment may not be the best choice and may represent a greater source of potential risk. Personal delivery and pick-up orders seemed to be better options when transporting fresh products. When products are delivered by personal delivery, the companies used their own temperature-controlled trucks to ensure the quality of the products was maintained during transportation. Customer pick-up orders were also popular when dealing with perishables as the company is not responsible for the delivery. Of course, personal delivery and pick-up limits the market areas that can be serviced and can negate many of the advantages of e-commerce. A central question for further research is whether it is the degree of perishability of the product, or the absence of appropriate technology in courier companies that limits their use in the delivery of perishable products.

The use of a courier service when transporting non-perishables was a more obvious choice. Couriers, in this case, do not need to be temperature controlled and the amount of time to delivery is not crucial to the quality of the products. Couriers firms are

cheaper over long distances due to the economies of scale they enjoy by shipping a large variety of products. Individual firms delivering a limited range of products will have much higher unit costs. Using a courier for non-perishables also has the advantage that the customer could usually choose whether they wanted their food purchases to be delivered by 'standard shipping', 'express' or 'overnight delivery', depending on how soon the products were needed and the extent to which the customer was willing to pay shipping charges. Large variations also existed in the delivery fees, with different means of calculating delivery fees based on location, distance from the supplier, weight, value of the purchase and the type of product being delivered.

Some examples of the different delivery fee calculations included:

- 'Minimum order of \$30, additional fee of \$10 for orders below \$30, free delivery on orders over \$60'
- 'Costs range from \$8.99-19.99, depending on location and method of shipping'
- 'Pick-up orders – \$5 or home delivery – \$15'
- 'Shipping and handling charges are \$5 plus 10% of total purchase, add an additional \$4 for handling of fresh produce'

There were also differences in the time lag between ordering the product and either picking-up the order or having it delivered. The time lags ranged anywhere from thirty minutes for pick-up orders to three days for standard delivery. An interesting concept used by one company is online ordering of products, with delivery delayed for a long period of time. The company allows customers to specify delivery as far ahead as one year. This could be a useful feature for those who travel and want to order their

groceries before they leave, having them delivered the day they return home. It may also be a way for customers to reduce the risk of future price rises while giving the seller a degree of guaranteed sales that can assist in its production planning process.

Another feature offered by a few companies is the ability to order a specific bundle of groceries once and have them delivered weekly. One might want to have a carton of milk and a loaf of bread delivered every week, but not want to have to re-order them each time. These are just a few examples of how the food sector is using e-commerce sector to tap into new niche markets and diversify away from conventional marketing channels.

4. Survey of Food Companies Using E-Commerce

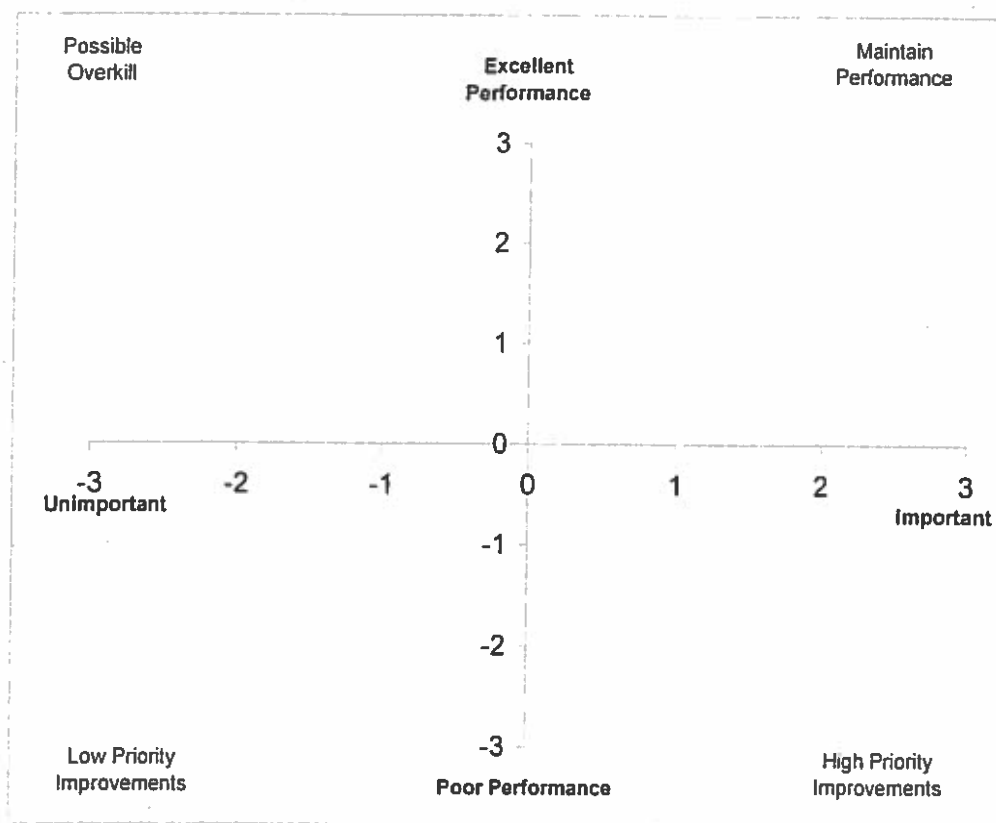
4.1 Survey Methodology

Having identified websites selling food products and analysed the information contained on those sites, the next step was to conduct a survey of firms marketing food online. Seven attributes of e-commerce systems that may be important to the success of e-commerce for food products were identified. These included: offering a variety of food products, online payment systems, offline payment systems, delivery methods, selling to customers in other countries, quality control during shipment, and customer feedback. Two aspects of each attribute were of interest - the relative importance of the attribute for success in e-commerce, and the extent to which firms were satisfied with that attribute of their e-commerce business. Thus, for each attribute, two survey questions were designed. The first question asked whether or not the respondent felt a specific attribute was an *important* aspect of e-commerce (this question will be called the importance question). A

second question asked how they felt their company was *performing* with respect to that attribute (this will be called the performance question). A 7 point Likert scale was used for each question, from 1=unimportant to 7 = extremely important, and 1= poor performance to 7= excellent performance. A copy of the survey instrument is included in Appendix A.

The average responses to the importance/performance questions for each attribute yield a multi-dimensional evaluation of e-commerce marketing channels and can be plotted as in Figure 5 (Funk, 1980). The Likert scale used in the questionnaire is converted to a seven point scale ranging from -3 (unimportant/poor performance) to +3 (extremely important/good performance).

Figure 5: Multi-Dimensional Scaling Methodology



groceries before they leave, having them delivered the day they return home. It may also be a way for customers to reduce the risk of future price rises while giving the seller a degree of guaranteed sales that can assist in its production planning process.

Another feature offered by a few companies is the ability to order a specific bundle of groceries once and have them delivered weekly. One might want to have a carton of milk and a loaf of bread delivered every week, but not want to have to re-order them each time. These are just a few examples of how the food sector is using e-commerce sector to tap into new niche markets and diversify away from conventional marketing channels.

4. Survey of Food Companies Using E-Commerce

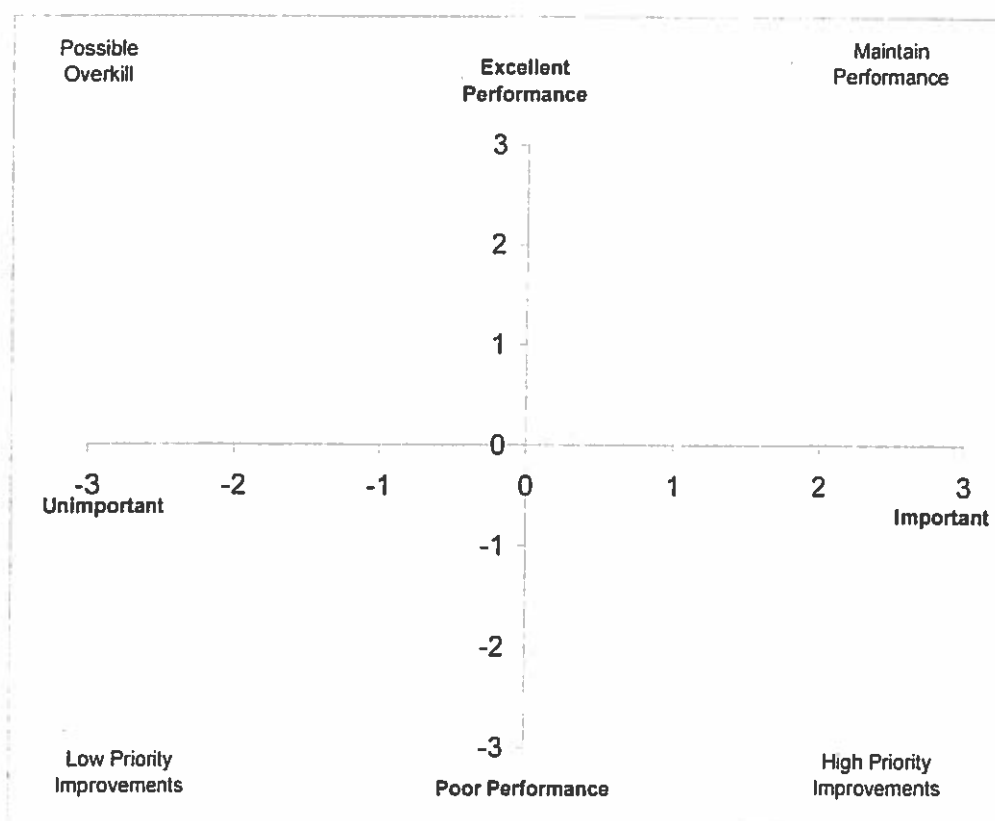
4.1 Survey Methodology

Having identified websites selling food products and analysed the information contained on those sites, the next step was to conduct a survey of firms marketing food online. Seven attributes of e-commerce systems that may be important to the success of e-commerce for food products were identified. These included: offering a variety of food products, online payment systems, offline payment systems, delivery methods, selling to customers in other countries, quality control during shipment, and customer feedback. Two aspects of each attribute were of interest - the relative importance of the attribute for success in e-commerce, and the extent to which firms were satisfied with that attribute of their e-commerce business. Thus, for each attribute, two survey questions were designed. The first question asked whether or not the respondent felt a specific attribute was an *important* aspect of e-commerce (this question will be called the importance question). A

second question asked how they felt their company was *performing* with respect to that attribute (this will be called the performance question). A 7 point Likert scale was used for each question, from 1=unimportant to 7 = extremely important, and 1= poor performance to 7= excellent performance. A copy of the survey instrument is included in Appendix A.

The average responses to the importance/performance questions for each attribute yield a multi-dimensional evaluation of e-commerce marketing channels and can be plotted as in Figure 5 (Funk, 1980). The Likert scale used in the questionnaire is converted to a seven point scale ranging from -3 (unimportant/poor performance) to +3 (extremely important/good performance).

Figure 5: Multi-Dimensional Scaling Methodology



The figure simultaneously tabulates the importance and the performance of each attribute. The horizontal axis gives the average importance level of each attribute, while the vertical axis shows the performance rating. The attributes that fall in the upper right hand quadrant are those rated as important and which are performing well, suggesting that the industry should "maintain performance" in these aspects of e-commerce marketing. The upper left hand quadrant shows the aspects that are performing well, but are not of significant importance. There is "possible overkill" in terms of the resources the companies are dedicating to these aspects of the system. The lower half of the graph illustrates those attributes for which performance is unsatisfactory and, depending on the left or right side of the graph, are low or high priority for improvements, respectively.

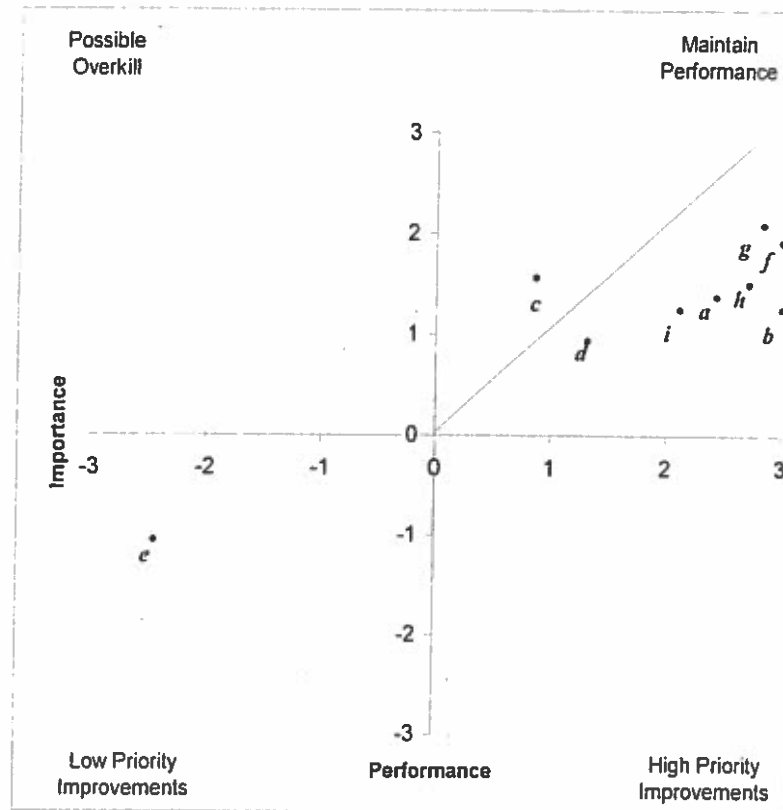
A telephone survey was conducted in July and August of 2000. Companies identified in the web-search were contacted and asked to participate in the survey. Those that did not currently receive a portion of their sales through e-commerce were excluded from the sample. A total of sixteen usable responses were received⁵. The sixteen companies all compete in the food sector, with some selling a wide variety of grocery products, while others specialise in one type of product. The firms contacted varied in location, with thirteen being from the United States, two from Canada and one from the United Kingdom.

4.2 Survey Results

Figure 6 presents the results of the multi-dimensional scaling analysis for the seven e-commerce attributes.

⁵ Given the relatively small sample size, caution must be exercised in interpreting the results. Nevertheless, some interesting insights are provided.

Figure 6: Importance-Performance Assessment of E-Commerce Attributes



Attribute Key:

- a* 'variety of foods'
- b* 'online payments'
- c* 'offline payments'
- d* 'delivery schedule'
- e* 'sales to other countries'
- f* 'quality control during shipment of fresh products'
- g* 'quality control during shipment of frozen products'
- h* 'quality control during shipment of non-perishable products'
- i* 'customer feedback'

The attribute key indicates each pair of importance-performance questions from the survey instrument (see Appendix A). For example, 'variety of foods' signifies the questions "how important is it to offer a variety of food products on a website" and the follow up question "how satisfied are you with the variety of products you offer on your

website". The attributes 'online payments' and 'offline payments' correspond to "how important is it to offer online (or offline) payments", respectively. The second question dealing with this attribute was "how satisfied are you with your online (or offline) payment system". 'Delivery schedule' represents the questions "how important is it to the success in e-business that consumers can determine the scheduling of delivery" and "how effectively do you think your customer's delivery needs are being satisfied". The attribute 'sales to other countries' asked "how important is it to sell to customers in other countries through your website" and "how easy is it to sell to customers in other countries through your website". Attributes, *f*, *g* and *h* all relate to quality control during shipment for fresh, frozen and non-perishable products. The last attribute studied in the survey dealt with 'customer feedback'. Here the questions asked "how important to the success of your web business is obtaining customer feedback" and "how effective have you been in obtaining customer feedback". The graph shows at a glance whether companies regarded specific aspects of the e-commerce sector to be important to the success of their e-business, and indicates how satisfied these companies are with their performance.

In analysing the importance-performance graph, six of the seven attributes scored in the 'Maintain Performance' category. However, there is still room from improvement. Inserting a 45° line into the Maintain Performance quadrant enables a closer comparison of the relative importance and performance of these attributes. Theoretically, an attribute that is performing perfectly (i.e. in direct proportion to its relative importance) would lie on the 45° line. Although respondents are in general satisfied with the performance of the attributes falling into this quadrant, anything that falls below the 45° line is still performing poorly relative to its importance. For attributes above the line, the opposite is

true, the attribute is outperforming its corresponding importance rating. For example, online payment (point *b*) rated as very important, but lies well below the 45° line, indicating that performance could be improved. Also 'quality control for shipment of fresh products' (*f*) was ranked as very important, but showed a somewhat poorer performance rating, being below the 45° line. 'Variety of foods', 'quality control during shipment of frozen products', 'quality control during shipment of non-perishable products' and 'customer feedback' all fell below the 45° line in the Maintain Performance category. Marginal improvements could push the attributes closer to the 45° line. Attribute *d* (delivery schedule) was the highest scoring attribute, lying closest to the 45° line.

Only one attribute (offline payments) fell above the 45° line in the Maintain Performance quadrant. This suggests that these food companies do not need to devote additional resources to this aspect of their e-commerce marketing channels, and could consider reallocating time and/or capital expenditures away from this feature.

Sales to other countries (*e*) was the only attribute lying outside the Maintain Performance category, emerging instead as a 'Low Priority Improvement'. This is an aspect of e-commerce that the survey respondents regard as relatively less important, and they consider that their e-commerce systems are not particularly successful at generating international sales. Given that potential access to a larger (international) market through e-commerce is one of the oft-quoted benefits of e-commerce, an important question is why these firms did not consider selling into foreign markets as particularly important. It may be that there are barriers to e-commerce sales internationally that deter these firms from pursuing international market opportunities.

5. Marketing Implications

In addition to the analysis presented in Figure 6, additional comments by the respondents provide insight into some of the constraints that they have experienced in using online marketing channels. A selection of the comments made by survey respondents are provided below:

- “The shipping costs to other countries are too high for our customers and every package we have sent has been opened by customs. It is not worth the hassle.”
- “The hardest part of online selling is the delivery system.”
- “With credit card payments the number has to be manually entered which takes a long time.”
- “Very few people ask about offline payment, it is unnecessary.”
- “With UPS and Canadian Post, some of the rural areas take longer and are harder to send packages to.”

Many of these constraints were reported by more than one respondent, indicating that the sector, not individual firms, needs to devise ways to overcome the barriers. In some cases, government policies need to be formulated or revised to offer a solution to the problems. International selling, clearing customs, accessing rural areas and online security are all areas that can cause difficulties for agri-food firms engaged in e-commerce.

The low score for ‘sales to other countries’ can be attributed to a number of factors, the most important of which is that crossing borders means dealing with customs. This process can be time consuming if packages need to be opened and inspected,

Problems of this magnitude would have a negative impact on the profits from e-sales and may deter companies from adopting the technology.

In contrast to other attributes where improvements are needed, offline payment systems seem to be becoming obsolete. A number of companies commented that offline payment systems are inefficient and that very few customers inquire about paying offline. These companies feel that implementing or improving an offline payment system is unimportant since the demand is small. However, the companies who rely solely on offline systems reported it was an important component of their e-commerce system and that they were performing well in the area.

As e-commerce continues to transform how companies sell products and how consumers purchase them, the need for some improvements is apparent. The companies who responded to the survey expressed positive experiences with their e-commerce enterprises, but also showed that continued success is not guaranteed. The lack of international sales, online payment security problems and delivery complications are key issues that need to be addressed if the potential benefits of e-commerce as a marketing and distribution tool for the food sector are to be realised.

5.1. E-Commerce for Niche Market Agricultural Products?

Newly developing industries with niche market products, such as bison, elk or ostrich meat, face a number of challenges in identifying target consumer segments and establishing the necessary supply chain infrastructure to service these niche markets on a consistent basis. E-commerce holds particular promise for producers of specialised food products and there are currently a few companies selling specialty meat products exclusively online. These companies seem to be experiencing the same difficulties

reported by firms that sell a variety of food products online. Three of the sixteen firms interviewed sold products online internationally, and two of these were the only firms in the sample selling specialised livestock products. Particularly for speciality meat producers in western Canada, faced with a small domestic market, it is important to be able to reach a range of niche markets. As such, reducing the barriers to international e-commerce should be a priority. We now turn to a consideration of these barriers.

6. Barriers to International E-Business

Consistent with the findings of the Internet web search and survey results reported in sections 3 and 4, other researchers have found that only about 15 percent of US companies conducting business online can fill international orders (Shewmake and Sapp, 2000). Thus, the global percentage of businesses selling products internationally using online systems is likely to be very small. Contrary to the basic premise that e-commerce would allow firms to market across borders to reach additional geographic areas, e-commerce is primarily being utilised in regional markets where the full potential of the technology is not being realised. There are three key barriers to international e-commerce: i) consumer liability, ii) language and currency differences and iii) customs fees and regulations.

6.1 Consumer Liability

Customs regulations have direct implications for e-consumers. While ordering items online seems quick and easy, there exist complex legalities affecting consumers who order items from foreign companies. According to US Customs, "When goods move from any foreign country to the United States, they are being imported." (Saliba, 2000). This implies that e-shoppers are not just ordinary consumers, but international

importers. Along with this interpretation comes the implication that the consumers are now responsible and liable for purchases from a foreign country. A consumer could be held accountable for goods that do not meet the national import regulations of the country in which they reside. Consumers can incur the fines and penalties that result from importing goods that are unsafe, fail to meet health code requirements, or that violate import quota restrictions (Saliba, 2000).

Further, some items, including food and agricultural products, require a license before importation can take place. For example, certain cheeses and meat products require a permit in order to import them into the US. Obtaining licenses and permits can represent a considerable transaction cost for individual consumers. If consumers incur high transaction costs and liability risks in purchasing food products online from an international supplier, at best the price they will be willing to pay for these products will be lower to reflect the increased costs and an appropriate risk premium. Further, some potential customers will be deterred from using e-commerce for international transactions.

2.2 Language and Currency Differences

Although not as problematic, diverse languages and different currencies can present obstacles for e-businesses targeting international markets. Obviously, a transaction can not occur if the language the customer understands and the language the website uses are not compatible. E-commerce, however, has an advantage over conventional systems as it is much easier and less costly to convert a website to many different languages rather than labelling products in several languages. Firms must be

aware of regulations in the markets they are targeting to ensure that any language requirements are being met.

Different currencies can also affect the number and profitability of a firm's international orders. As the exchange rate fluctuates, international sales can increase or decrease. Fees must be paid when currency is exchanged. These fees usually have a fixed cost component. Intermediaries such as credit card companies can be used which reduce costs due to bulk currency transactions, with the costs reflecting in the transaction fees charged to firms.

The use of different languages, as well as currency differences must be taken into account to be successful in international e-commerce. These are not problems unique to electronic transactions, nevertheless, they are important in developing e-commerce marketing channels across international borders.

6.3 Customs and Inspections Fees

The foremost barrier to online sales into other countries is the cost incurred in getting products across national borders. Traditionally, a considerable portion of commerce is based on the shipment of container-sized lots. Traditional supply chains are based on consumers visiting a retail distribution centre, re-supplied through business to business transactions involving large lot sizes. In international trade law, "Customs duties imply the importation of a good, which could then be subject to border tariffs." (Teltscher, 2000, p.4). Since e-commerce allows consumers to order products internationally, the products must be imported into the country in which the consumer resides, therefore subjecting the products to full customs duties. These duties are based on volume of shipping, value of shipments and in some cases, special requirements. For

example, the customs and inspections fees are different for perishable meat products compared to dry pasta products, due to the stringent, and therefore more costly, sanitary-phyto-sanitary inspection of fresh meat products and the minimal or non-existent inspection process for dry products. These fees have often been put in place to recover the costs of the inspection processes and general service costs.

Large distributors and wholesalers typically have been the type of firms sending products across borders. These shipments tend to be large lots (truckloads, railcars or containers) carrying thousands of dollars worth of goods. The current customs system is designed to accommodate these shipments, with fee calculation and inspection processes geared toward large lots. This worked well when only large shipments were being sent, but with the emergence of e-commerce the customs and inspection system cannot readily accommodate small packages. The specific problem arises when firms try to ship small packages and encounter fixed customs costs. These fixed fees increase the firms' average fixed costs since the e-commerce package is worth only a fraction of a regular truckload. In many cases, these fixed customs charges are sufficiently large to prevent a profitable transaction.

As reported in section 3, in the Internet search only 17 percent of e-businesses selling food products direct to consumers (B-2-C transactions) were selling products internationally. The follow-up survey confirmed that customs complications were an important reason for the dearth of international sales. These findings prompted further investigation of customs and inspections fees and their affect on the viability of e-businesses across international borders

7. Comparison of Customs and Inspections Fees

To determine the extent of this barrier to international e-commerce, the potential customs and inspections fees were calculated for 'standard' bulk sized shipments and 'e-commerce' sized shipments for four different food products. The comparisons illustrate how the size of a shipment affects the relative custom fee burden.

7.1 Customs Comparison Methodology

Direct comparisons were made of the custom fees for four food products that would normally be sold in bulk shipments but now, through e-commerce, can be sold directly to consumers. To ensure that a wide range of possible customs regulations were considered, the four products were chosen based on different US Food and Drug Administration (FDA) categories.

The four products were:

1. 5 oz. Top Sirloin Beef Steaks (Canadian Grade AAA) (*fresh meat product*)
2. Macintosh Apples (*perishable product*)
3. Pure Elk Antler Capsules (*specialty, nutraceutical product*)
4. Dry Pasta (*non-perishable product*)

To obtain the appropriate size comparisons for traditional commodity shipments versus e-commerce consumer shipments, a number of individuals involved in each industry were contacted regarding the size of typical shipments. Details of the size of the shipment, its value and its destination were needed for an accurate estimate of the customs and inspections fees. Each product was assigned two shipment sizes, a 'regular' bulk shipment and a small 'e-commerce' sized shipment. Fees were determined with the assistance of a customs broker who calculated the fees applicable in each case. Once the

information was received, each customs fee was converted and evaluated on a 'per pound' basis. Full details of the calculations are provided in Appendix B.

7.2 Customs Comparison Results

The results of the comparisons of customs and inspection fees for a regular (bulk) shipment and a typical e-commerce shipment are displayed in Table 1.

Table 1: Customs & Inspection Fees - Exporting Products from Canada to the US

<u>Product</u>	<u>Shipment Size</u>	
	Regular^a	E-Commerce^b
5 oz. Top Sirloin Beef Steaks (Grade AAA)	\$0.024/lb.	\$151.04/lb.
Macintosh Apples	\$0.0065/lb.	\$128.73/lb.
Pure Elk Antler Capsules	\$0.54/lb.	\$1229.73/lb.
Dry Pasta	\$0.00495/lb.	\$40.73/lb.

Notes:

^a Refers to the standard shipment size as cited by an industry representative.

^b Refers to the average shipment size offered by e-businesses in the food sector.

All prices are listed in Canadian dollars.

All shipments must also be covered by a US Customs Surety Bond, which is a minimum annual fee of Cdn \$770.00. The customs bond is not included in the above calculations.

Exchange rate: Cdn \$1.54 per US \$ (July 25, 2001).

It is not difficult to see that the customs and inspections fees put e-commerce shipment at a serious competitive disadvantage. For example, if a firm were to sell a regular shipment of steaks to the US they would incur a 2.4 cent per pound fee to get the package across the border. However, if that same firm tried to send exactly the same steaks, but in an e-commerce sized shipment, the customs fees would amount to

Cdn\$151.04 per pound. This makes for a difference of Cdn\$148.64 per pound simply as a result of a smaller shipment size⁶.

The story becomes even more discouraging for e-business when one considers the value of each shipment. To expand on the steaks comparison, the regular shipment size would have a value of approximately Cdn \$198,450 compared to Cdn \$15 for the e-commerce sized package⁷. In the e-commerce case the customs and inspections fees are about 10 times more than the value of the product.

The relative competitiveness of e-commerce sized shipments worsens if we include the annual customs bond fee where applicable, therefore assuming only one shipment per year. Factoring in the annual customs bond, the costs change to \$0.055/lb for a regular shipment of beef versus \$185.54/lb for an e-commerce shipment; \$0.0098/lb versus \$158.13/lb for regular and e-commerce sized apple shipments respectively; \$2.29/lb for a regular sized shipment of elk antler capsules versus \$229.17/lb, and \$0.00742/lb for a regular sized shipment of pasta versus \$40.73/lb for the e-commerce shipment.

7.3 Effects of Customs Fees on International E-commerce

The current customs and inspections fees clearly have important implications for the expansion of e-commerce into international markets. As shown in Table 1, customs fees can make international online selling on a B-2-C basis commercially unviable. If firms regard international e-commerce as unprofitable, the sector will not expand in this direction. Without an international component, e-commerce does not hold the magnitude

⁶ The calculations for the beef and apple e-commerce shipments included a courier fee. If we remove this fee from the calculations (given that transportation costs are not included in the regular sized shipments), the e-commerce costs drop to Cdn\$122.29/lb for beef and \$104.23/lb for apples. As can be seen from Table 1, this is still substantially more than cost of the corresponding regular shipments.

of benefits to consumers and to firms with small domestic markets that was originally anticipated. In theory, e-commerce should enable consumers to purchase a multitude of products from anywhere in the world over the Internet and have the products delivered directly. If firms are not able to offer this feature, consumers are left with fewer choices. While high customs fees in the past may have been a minor constraint to international commerce, they become a major barrier to international trade for B-2-C e-commerce in the food industry.

8. The Need for New Trade Policies

Despite the WTO Declaration on Global Electronic Commerce, adopted in May 1998, which stated that customs duties would be addressed at the Seattle meeting in 2000, no agreement has been reached (Nielson and Rosemary, 2001). At the WTO Ministerial meeting in Doha, Qatar in November 2001, the Ministerial Declaration re-affirmed the commitment of Members to ongoing negotiations and stated that:

Electronic commerce creates new challenges and opportunities for trade for Members at all stages of development, and we recognize the importance of creating and maintaining an environment which is favourable to future development of electronic commerce (WTO, 2001, p. 7).

The current lack of an agreement is a factor preventing the expansion of e-commerce into international markets. Without an agreement, customs fees remain geared towards large shipments and are mostly based on a flat rate, which makes small e-commerce sized shipments uncompetitive. Although this did not create any major

⁷ Assuming a wholesale price of \$17.50/kg.

problems when most shipments crossing borders were large truckloads, the development of e-commerce provides a strong incentive for change.

A change in trade policies would be advantageous for developed as well as developing countries. Developed countries would see further penetration of e-commerce into existing markets bringing lower prices and more choice to consumers, as well as greater access to potentially lucrative export markets for suppliers. E-commerce could help developing countries by facilitating participation in world trade, with lasting beneficial effects in terms of economic growth. Presently, the lack of customs reforms restricts global B-2-C e-commerce.

Electronic commerce is by definition global. Whether the action is domestic or regional, private or public sector – all electronic commerce policies and activities will have limited impact unless they facilitate a global reach (OECD, 1998).

This statement reflects the common attitude that to fully maximise the benefits from e-commerce, access must be available at a worldwide level. In order to reach this level, trade policies dealing with customs regulations need to be re-examined. The lack of an agreement by governing bodies is already hampering the growth of international e-commerce. Firms in North America will be particularly disadvantaged relative to those in the European Union where internal customs duties have been abolished and products flow freely across national borders within the customs union. The issue is particularly pertinent for firms in emerging niche market sectors with small domestic market potential, such as the specialised livestock sector in western Canada. Consumer choice is also restricted. A policy imperative for those charged with drafting customs fee structures and negotiating reciprocal custom fee regulations should be to address this

barrier to international e-commerce, beginning with barriers between the NAFTA countries.

9. References

- Armstrong, J., Ayars, M., Barber, D., Dobbs, S., Patterson, M., Ferguson, M. and Nixdorf, R. 1998. *Bison Production: Economic and Production Information for Saskatchewan Producers*. Saskatchewan Agriculture and Food, Regina.
- Canadian Business. 2000. *Fast Forward: Accelerating Canada's Leadership in the Internet Economy*, Report of the Canadian E-Business Opportunities Roundtable, January 2000, <http://www.canadianebusiness.com/stats.htm>
- Coase, R.H. 1937. The Nature of the Firm. *Economica*, n.s.4, 386-405.
- Covino, D. and Porro, Q. 2000. How E-commerce Changes the Face of Food Distribution: The Case of typical Italian Products. ". In Trienekens, J. H. and Zuurbier, P.J.P. (Eds.) *Chain Management in Agribusiness and the Food Industry*. Proceedings *Chain Management in Agribusiness and the Food Industry*. Proceedings of the Fourth International Conference, Wageningen, the Netherlands. pp. 565-573
- Dilke, C. 2000. Thieves threaten e-tailers' profits. *Financial Times*. (September 14, 2000).
- Funk, T. 1980. The Farmer Decision Process in Purchasing Herbicides. *Canadian Journal of Agricultural Economics*, 28(2), 26-40
- Hobbs, J.E., 1996. A Transaction Cost Approach to Supply Chain Management. *Supply Chain Management: an International Journal*, 1(2), 15-27.
- Hobbs, J.E., A. Cooney and W. A. Kerr. 2000. Developing Supply Chains in Infant Industries: Opportunities and Challenges. In Trienekens, J. H. and Zuurbier, P.J.P. (Eds.) *Chain Management in Agribusiness and the Food Industry*. Proceedings of the Fourth International Conference, Management Studies Group, Wageningen University, Netherlands, May: 589-598.
- Hobbs, J.E. and Sanderson, K. 2001. Partnerships and Profitability in the Bison Industry. In B. Rutley and V. Anderson (eds.) *Bison Are Back – 2000*. Proceedings of the Second International Bison Conference, Aug 2-4, 2000, Edmonton, Alberta, 103-118.
- Hodgson, G.M. 1998. Competence and Contract in the Theory of the Firm. *Journal of Economic Behavior & Organization* 35(2),179-201.

- Kolbe, J. 1999. *International Trade and E-commerce: Framework for the Future*. An address before the National Law Center for Inter-American Free Trade, October 1, 1999.
http://www.house.gov/apps/list/speech/az05_kolbe/sp_991001_trade.html
- Langlois, R.N. and Foss, N.J. 1997. *Capabilities and Governance: the Rebirth of Production in the Theory of Economic Organization*. Danish Research Unit for Industrial Dynamics, Working Paper No. 97-2, January.
- Mann, C.L., Eckert, S.E., Cleeland Knight, S. 2000. *Global Electronic Commerce*. Institute for International Economics, Washington, D.C.
- Nielson, J. and Rosemary, M. 2001. E-commerce and Trade: Resolving Dilemmas. *OECD Observer*. <http://www.oecdobserver.org/news/fullstory.php/aid.421.html>
- OECD. 1998. *A Borderless World: Realising the Potential of Global Electronic Commerce*. OECD Ministerial Conference, SG/EC(98)14/REV6. Ottawa, Canada.
- Saliba, C. 2000. U.S. Issues E-Commerce Customs Warning. *E-Commerce Times*, December 5. <http://www.ecommercetimes.com/perl/story/5706.html>
- Sanderson, P.K. 2001. *Consumer Preferences: The Bison Meat Industry*, MSc Thesis, Department of Agricultural Economics, University of Saskatchewan, Saskatoon.
- Shewmake, B. and Sapp, G. 2000. Vendors Are Working Toward Bringing Their E-business Overseas. *InfoWorld*, April 28.
<http://www.infoworld.com/articles/hn/xml/00/05/000501hncnabler.xml>
- Teltscher, S. 2000. *Tariffs, Taxes and Electronic Commerce: Revenue Implications For Developing Countries*, United Nations Conference on Trade and Development, United Nations, New York.
- Williamson, O.E. 1975. *Markets and Hierarchies: Analysis and Anti-Trust Implications: A Study in the Economics of Organization*, Free Press, New York.
- Williamson, O.E. 1986. *Economic Organization – Firms, Markets and Policy Control*, Harvester Wheatsheaf, Hemel Hempstead, Hertfordshire, UK.
- World Trade Organization 2001. *Ministerial Declaration*, Ministerial Conference, Fourth Session, Doha, Qatar (WT/MIN(01)/DEC/W/I, 14 November 2001), <http://www.wto.org/>.

**APPENDIX A:
SURVEY INSTRUMENT**

THE UNIVERSITY OF SASKATCHEWAN
Department of Agricultural Economics

We are conducting a study of e-commerce in the food industry. Our objective is to understand the key success factors to marketing food products via the Internet as well as the main barriers and how these might be overcome. We would be very interested in learning about your experience in marketing your products via the web. We are not seeking commercially sensitive information and all responses will be treated in the strictest of confidence.

Person interviewed _____
Position _____
Company Name _____
Phone Number _____
Date _____

The following questions ask about your experience with e-commerce. In each case, we will ask you how important you think a factor is to successful e-commerce, then how satisfied you are with this factor in your e-business.

(Circle one)

1 (a) On a scale of 1 to 7, where 1 is very unimportant and 7 is very important, how important is it to offer a variety of food products on a web site?

1 2 3 4 5 6 7

1(b) Now, on a scale of 1 to 7, where 1 is very dissatisfied and 7 is very satisfied how satisfied are you with the variety of products you offer on your web site?

1 2 3 4 5 6 7

2(a) On a scale of 1 to 7, where 1 is very unimportant and 7 is very important, how important is it to offer **online** payments (e.g.: credit card, cybercash)?

1 2 3 4 5 6 7

2(b) Now, on a scale of 1 to 7, where 1 is very dissatisfied and 7 is very satisfied how satisfied are you with your **online** payment system?

1 2 3 4 5 6 7

If dissatisfied, why? _____

3(a) On a scale of 1 to 7, where 1 is very unimportant and 7 is very important, how important is it to offer the ability to pay **offline** (eg: cheque, money order, COD)?

1 2 3 4 5 6 7

6(a) Which or the following products do you sell online? (Circle all, which apply to your business)
 fresh
 frozen, and/or
 nonperishable

6(b) On a scale of 1 to 7, where 1 is very unimportant and 7 is very important, how important is quality control during shipment to the customer for:

(i) *fresh food products*

1 2 3 4 5 6 7

(ii) *frozen food products*

1 2 3 4 5 6 7

(iii) *nonperishable food products*

1 2 3 4 5 6 7

6(c) Now on a scale of 1 to 7, where 1 is very dissatisfied and 7 is very satisfied how **satisfied** are you with quality control during shipment to the customer for:

(i) *fresh*

1 2 3 4 5 6 7

(ii) *frozen*

1 2 3 4 5 6 7

(iii) *nonperishable*

1 2 3 4 5 6 7

If dissatisfied, why?

7(a) On a scale of 1 to 7, where 1 is very unimportant and 7 is very important, how important to the success of your web business is obtaining customer feedback?

1 2 3 4 5 6 7

7(b) Now on a scale of 1 to 7, where 1 is not at all and 7 is completely, how **effective** have you been in obtaining customer feedback?

1 2 3 4 5 6 7

Finally, we would like to ask you some general questions about your experiences with e-commerce.

8. What proportion of your sales in 2000 have come from e-commerce?

9 What proportion of your web site customers use your **online** payment methods?

10. On a scale of 1 to 7, where 1 is very difficult and 7 is very easy, how easy has it been to attract people to your site?

1 2 3 4 5 6 7

11. How have you attempted to attract people to your site?

12. Do you have any other comments about major successes or problems you have experienced with e-commerce. *Thank you for your time!*

APPENDIX B
CUSTOMS FEES CALCULATIONS

Table B.1: Breakdown of Customs Fees for 5oz. Top Sirloin Beef Steaks

<u>Breakdown of Fees</u>	<u>Shipment Size</u>	
	Regular ^a (25,000 lbs.)	E-Commerce ^b (1.875 lbs.)
FDA Inspection Fee	\$0.003696/lb.	\$122.29/lb.
Customs Brokerage Fee	\$0.020328/lb.	N/A
Bond Fee ^c	\$0.0308/lb.	\$34.496/lb.
Courier Charge ^d	N/A	\$28.75/lb.

Note: ^a Refers to the standard shipment size as cited by an industry representative.

^b Refers to the average shipment size offered by e-businesses in the food sector.

^c Bond fees are calculated on a per shipment basis, not on an annual basis

^d Charge levied on air shipments to move products from airport.

All prices are listed in Canadian dollars.

Exchange rate: Cdn \$1.54 per US \$ (July 25, 2001).

Table B.2: Breakdown of Customs Fees for Macintosh Apples

<u>Breakdown of Fees</u>	<u>Shipment Size</u>	
	Regular ^a (22,500 lbs.)	E-Commerce ^b (2.2 lbs.)
FDA Inspection Fee	\$0.0065/lb.	\$104.23/lb.
Customs Brokerage Fee	N/A	N/A
Bond Fee ^c	\$0.003285/lb.	\$29.40/lb.
Courier Charge ^d	N/A	\$24.5/lb.

Note: ^a Refers to the standard shipment size as cited by an industry representative.

^b Refers to the average shipment size offered by e-businesses in the food sector.

^c Bond fees are calculated on a per shipment basis, not on an annual basis

^d Charge levied on air shipments to move products from airport.

All prices are listed in Canadian dollars.

Exchange rate: Cdn \$1.54 per US \$ (July 25, 2001).

Table B.3: Breakdown of Customs Fees for Pure Elk Antler Capsules

<u>Breakdown of Fees</u>	<u>Shipment Size</u>	
	Regular ^a (440 lbs.)	E-Commerce ^b (0.0312 lbs.)
FDA Inspection Fee	\$0.5425/lb.	\$1229.17/lb.
Customs Brokerage Fee	N/A	N/A
Bond Fee ^c	\$1.75/lb.	N/A
Courier Charge	N/A	N/A

Note: ^a Refers to the standard shipment size as cited by an industry representative.

^b Refers to the average shipment size offered by e-businesses in the food sector.

^c Bond fees are calculated on a per shipment basis, not on an annual basis

All prices are listed in Canadian dollars.

Exchange rate: Cdn \$1.54 per US \$ (July 25, 2001).

Table B.4: Breakdown of Customs Fees for Dry Pasta

<u>Breakdown of Fees</u>	<u>Shipment Size</u>	
	Regular ^a (28,000 lbs.)	E-Commerce ^b (2.0 lbs.)
FDA Inspection Fee	\$0.00495/lb.	\$40.73/lb.
Customs Brokerage Fee	N/A	N/A
Bond Fee ^c	\$0.002475/lb.	N/A
Courier Charge	N/A	N/A

Note: ^a Refers to the standard shipment size as cited by an industry representative.

^b Refers to the average shipment size offered by e-businesses in the food sector.

^c Bond fees are calculated on a per shipment basis, not on an annual basis

All prices are listed in Canadian dollars.

Exchange rate: Cdn \$1.54 per US \$ (July 25, 2001).