THE DARK SIDE OF INTERNATIONAL E-COMMERCE: LOGISTICS

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In this paper we describe logistical barriers which may impede the successful development of global e-business and thus represent the dark side of international e-commerce. We suggest that for logistics companies servicing international e-businesses, proper inventory management and timely delivery are the basic requirements required to maintain customer loyalty and control costs. For the international e-business venture, the key is to stay sensitive, innovative and flexible in designing and monitoring global logistical strategies in order to solve ever-changing and unique challenges. As e-businesses go global, logistics networks which can provide inventory (no matter where the customer is located) and instantaneous information are a prerequisite for success.

INTRODUCTION

At the height of post World War II American economic prosperity, Peter Drucker described distribution/logistics as the U.S. economy's "dark continent" (Drucker 1962). He meant that it was one of the most neglected, least understood, yet potentially most promising areas of American business. Drucker encouraged American managers to raise the effectiveness/efficiency of the U.S. distributive system as a means to combat foreign competition and improve profitability.

Despite the dot-com bust, internet usage and e-commerce continues to grow (Akhter and Alam 2001). International e-commerce is touted as something which will revolutionize international business. By using internal and external networks to create market efficiencies, large and small firms will become 'lean organization's able to leverage their dynamic capabilities in order to positively influence performance (Nitish and Kundu 2002). Many Internet start-up companies believe that e-commerce will eliminate the middleman (wholesalers, retailers, etc.), allowing e-businesses to effortlessly sell their goods in many national markets simultaneously. People from anywhere in the world will be able to buy a company's product by logging in, pointing, and clicking.

Retailers are responding by forming partnerships with e-commerce businesses like Yahoo and AOL. Business schools are offering new courses in e-commerce and academics are designing degree programs in e-commerce studies. In short, e-commerce is seen as something that will fundamentally alter the manner in which business will be conducted in the 21st century.

The E-excitement may have some merit, particularly within the confines of the American marketplace. However, we suggest that with respect to international business, this optimism may be premature. International business is quite different from domestic commerce and these differences constitute major obstacles to the click and point philosophy of international trade.

E-business as a research domain for academics is relatively new. A great deal of work, both theoretical and empirical, needs to be undertaken so that the commercial possibilities afforded by the Internet can

The Marketing Management Journal
Volume 12, Issue 2, pages 123-134
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be fully exploited by the business sector. Certainly much of the work that is being done in this area has implications for international firms. However, there exists an acute need for research specifically focused on questions relevant to international e-business firms. It has been suggested that the lack of such research challenges the accuracy of our very understanding of international business (Hamill 1997). With the globalization of the economy, and with the contribution that the web has already made to the internationalization of many firms, such research is past due. As a result, multinational corporations are not receiving the benefits of theoretically verifiable and systematized analysis that should be available.

In this paper we partially address the problem described above by discussing logistical barriers which impede the successful development of global e-business and thus, represent the dark side of international e-commerce. We begin by describing how international e-commerce differs from domestic e-business and traditional international business. The major challenges of international logistics are then discussed. Finally, several major problems faced by international e-commerce firms are described and solutions to those problems are offered.

E-business, International Business and International E-business

Many issues important to international e-business firms are also relevant to traditional companies working overseas as well as traditional businesses operating in domestic markets. At the same time, the problems and opportunities faced by an international e-business may be quite different from those faced by traditional firms. Table 1 delineates the differences between these three possibilities.

Domestic E-business Versus International E-business

The primary difference between domestic e-business and international e-commerce is one of complexity. Compared to domestic e-business, international e-business operates in an intricate and often confusing, environment.

Indicative of this complexity is the comparative ease in which domestic e-firms calculate shipping costs. Domestic e-businesses typically tack an average shipping-handling fee along with a tax surcharge onto sales. National or state sales taxes are generally waived for physical goods in major developed countries. Because shipments take place within national borders, tariffs, quotas, and customs clearance are nonissues. In addition, transport and insurance costs are often low.

For international e-businesses, transport and insurance costs are high. Country and regulation differences mean that international e-commerce firms face extreme difficulties in calculating shipping costs before the actual time of order execution. It is often hard to determine national and subnational sales taxes, let alone taxes on cross-border payments and value added taxes.

Operating an e-business globally also adds complexity in terms of packaging, documentation and labeling requirements. These requirements exist because of a tragic accident that took place over a century ago. An unmarked crate of nitroglycerin was shipped from Scandinavia to the U.S. in 1872. A deadly explosion resulted when the crate was opened with hammers and crowbars (Neipert 2000). Therefore, documentation, packaging and labeling requirements are taken seriously in international commerce. However, what is relatively simple for an e-business to do domestically, is fraught with potential error in the international environment. Noncompliance with often detailed requirements may result in delays or even legal culpability.

Finally, in contrast to the domestic sphere, there is not an agreed upon set of laws to regulate international e-commerce. Markets operate successfully only within the context of corresponding rules. The lack of international e-commerce regulation constitutes a substantial barrier to the successful implementation of international e-business strategies.

Table 1
Differences Between Domestic and International E-Commerce

Areas	Domestic E-Commerce	Traditional International Business	International E-Commerce
Complexity of Calculating Cross-Border Taxes, Quotas and Tariffs	N.A.	Low	High
Quality of Infrastructure	High	Adequate	Low
Availability of Appropriate Warehousing	High	Adequate	Low
Adequacy of Information Technology	High	Adequate	Low
Cost Uncertainty	Low	High	High
Customer Expectations	High	Low	High
Timely Delivery	High	Adequate	Low
Complexity of Reverse Logistics	Low	Low	High
Fraud	Medium	Low	High

If e-businesses can solve these problems, the potential rewards are great. According to the estimate of IDC based in Framingham, Mass., by 2003 more than 60 percent of Web users will reside outside the United States. Similarly, Stamford, Conn.-based Gartner forecasts that the share of global B2C e-commerce transacted outside of North America will rise to 61 percent by 2003, while the share of B2B is expected to increase to 63 percent by 2004. At the same time, any domestic companies ignoring the global trend of e-business will find their shares of business encroached by international e-business entries into domestic markets.

International Business Versus International E-business

For both international firms and global e-businesses, logistical operations present numerous challenges not commonly found in domestic settings. The level of uncertainty, the number of activities, and the complexity of operational constraints, often reduce the e-commerce firm's international operating efficiency. For example, freight is damaged or lost more often. Packaging, documentation, and labeling are more complex. Cycle times get longer, and international transportation and insurance are more expensive. Companies doing business overseas face language, cultural, and time barriers as well as distinct sets of foreign rules for packaging and transporting products.

Forrester Research (www.forrester.com) interviewed 40 vice-presidents of operations from retail, Internet and manufacturing companies with an online presence. They found that 85 percent cannot fill international orders because of complexities in shipping across borders. Barriers include local taxes, different currencies, language barriers and customs procedures. While these problems are common to international business they have often been ignored in discussions about international e-commerce firms.

Another complication for an international e-business is the quick transition it must make from a domestic firm to an international firm. Several studies indicate that firms progress through a number of stages before they become internationalized. The early stages are:

(1) passive exporting, (2) export management, (3) export department, and(4) sales abroad (Cullen 1999). By going through these stages a traditional firm has time to grow into a multinational corporation. In contrast, an e-business goes global as soon as it puts up its web site. This means that the challenges of e-commerce descend upon the newly minted international firm the moment it goes online. However, it is unrealistic for the managers of non-exporting firms to believe that they can become successful exporters by simply producing and maintaining a web site. Until a fairly developed and costly export specific infrastructure is developed within the firm, an Internet presence can be more trouble than it is worth (Saimee 1998).

Finally, many Internet executives ignore the role of logistics in international e-business because of their professional backgrounds. These individuals were previously technical wizards who believe fancy Web site designs are the key to their business successes, or marketers who think that attracting customers to the Web site or being the first to the market is paramount, or financiers who focus much more on getting the first several rounds of venture capital or going public. They may have only learned the real pain of logistics execution after serious business losses. The challenges that these executive face, which are the same those faced by traditional firms operating internationally, are described below.

Challenges of International Logistics

Logistics is that part of the supply chain process that plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information from the point of origin to the point of consumption in order to meet customers' requirements (http://www.clm1.org/). Logistics are relatively simple when inputs are close to production facilities and markets. Complexity occurs when natural factors, such as long distances, or manmade factors, such as laws and regulations, separate supplies and markets from production (Mendenhall, et al. 1995). The international dimension adds a series of impediments which can be overcome only through managerial expertise or through the actions of governments. These impediments are described below.

Trade Barriers and Exchange Rates

Tariff and non-tariff trade barriers constitute a significant logistical obstacles in international business. In addition to explicit governmental trade barriers (tariffs, quotas, local content laws, value added taxes, embargoes, etc.), implicit barriers exist. Obstacles, such as inspection laws, can be manipulated to prevent or delay products' entry to the market. Distribution channels may be owned by the maker of a competing product or service (Anonymous 2000). Such an environment increases the opportunities for business abuses, disputes and even crimes.

When exchange rates are volatile (the value of money made today may be different from money made tomorrow) and there is economic instability, international firms are exposed to high inventory costs, component obsolescence and non-fixed-asset sheet costs (Saccomano 1999).

Infrastructure

To most shippers distributing products (or sourcing raw materials or components from less developed countries), the most obvious obstacle to successful international logistical operations is inadequate or stretched transport infrastructures in almost all modes of transportation. Brisk economic growth in most of Asia is pushing port, road, and rail infrastructure across the region to the limit (Parker 2000). There are few highways, railroads, or road/rail links appropriate for international trade flows. Road conditions are often intolerably poor, which inhibits traveling speed and tends to damage transported goods. These barriers make it difficult to use coordination-based logistics strategies such as just-in-time (JIT).

The U.S. has an international logistics infrastructure problem of a different kind. Almost all U.S. imports and exports pass through a computer system built 15 years ago known as the Automated Commercial System (ACS). But today, ACS simply cannot keep up with the growth in international trade. What's

more, ACS cannot support modern business inter-connectivity or provide real-time, on-line information. It does not support the Internet or many other innovations. The ACS is not merely old; it is decrepit - so much so that it could fail at any moment. If it does fail, nothing will be able to move in or out of U.S. ports. Although ACS is currently experiencing slowdowns and brownouts, the U.S. government has yet to take any major action to correct this problem (Biederman 2000).

Warehousing

In a majority of Asia and Latin American countries, there is little availability of warehousing which meets North American standards. Those few local companies which operate well-furnished and spacious facilities often lack necessary information systems (Johnson 2000). Warehouses are rarely automated and even less frequently computerized (Anonymous 2002).

Outdated Information Technology

In international e-business logistics process, the information flow is often as important as the flow of physical goods involved. Thus, the rise of the global supply chain has created tremendous pressure on the freight-forwarding business and on information technology. Currently, information about shipments in the international supply chain is inadequate or sluggish. Often the culprit is an outdated and incomplete international information technology system. Ideally, a parts or product database has unique item identifiers. These include parts numbers, product descriptions which aid in tariff classification, an accurate value for customs purposes and correct country of origin information. Unfortunately such data bases are typically nonexistent. On the hardware side, while the use of advanced communication tools such as EDI, Satellite transmission and Internet are becoming more and more common in North American carriers, they are still relatively scarce in emerging markets, including most of Asia.

Many logistics service firms involved in global commerce (on which many e-businesses rely) exaggerate the level of service they can actually provide. Third party logistics (3PL) providers, hungry for business in a competitive market, have been known to promise more than they can deliver. This type of behavior can result in glitches in complex software and communications packages, can destroy an outsourcing partnership in its early stages, and is a major reason why 65 percent of all logistics contracts are prematurely canceled (Tyler 2000).

Cost Uncertainty

One of the biggest barriers to retailing in international markets is cost uncertainty. This makes it difficult to accurately price goods (Gregory 2001). A $15 order can balloon to $50 once duties, taxes and other landed costs are added. Valuation and classification are tough enough in the United States, but to keep current, foreign government publications that list tax and tariff classification data must be monitored daily. Binding rulings, such as those made by the U.S. Customs Service with regard to classification of goods, must also be checked regularly.

Overcoming International Logistics Barriers

Many of the challenges of international logistics will be overcome in the next several years. Emerging markets such as China and Brazil have invested heavily in infrastructure improvements and have started transportation sector, deregulation or privatization. Expected continuation of these activities should provide more efficient logistical operations to, from, and within those countries. In the near future, many key transportation corridors in Asia and Latin American will receive upgrades to standards similar to those found in the U.S. or Europe, easing some immediate pressure of trade traffic. These and other positive trends are outlined below.

Privatization

One method for achieving improved infrastructure is privatization. For instance, in a few years it is expected that almost every major port in Mexico, Central America and South America will be privately operated. Mexico, Guatemala, Brazil, Peru, Bolivia, Paraguay, and Argentina have already awarded franchises to private companies (Johnson 2000).

Privatization will bring more efficient operations, faster turnaround times, improved labor relations, and updated infrastructures.

In emerging markets with generally overloaded transportation infrastructure, unique niche strategies may work. For instance, while China has many airports, most of these are under-utilized. The Chinese government is financing 124 airport construction projects, many designed to improve cargo-handling capabilities and increase runway capacity. An e-business could pursue an effective niche logistical strategy by utilizing these new transport capabilities to reach the Chinese markets.

VMI Arrangements

To ward off the effects of economic instability and volatile currencies, traditional firms and e-businesses may wish to consider using vendor-managed inventory (VMI) arrangements and the use of a vendor hub. VMI shifts the responsibility for inventory management back to the supplier. Suppliers continue to supply their e-business clients based on their client's demand forecast; however, change of ownership is recognized only at the point where the goods are ordered by the e-business. The vendors share and pay for space use at a hub, typically owned by a third party logistics firms such as Circle International. A vendor hub helps to bring greater efficiency to the whole system.

Similar arrangements can be observed in the partnership between Amazon.com and Toys 'R' Us. Amazon helps sell may product lines of Toys'R' Us online, but in its distribution centers these toys are owned and replenished by Toys 'R' Us until the products are sold. (http://biz.yahoo.com/st.010416/23702.html). Amazon believes that this relationship is mutually beneficial because it allows both firms to concentrate their efforts most appropriately.

Evolution of Intermediaries

To tackle the requirements of effectively managing a global supply chain, freight forwarders need to expand their own coverage of services and territories, either through internal growth, acquisition or merger. The decline in trade barriers and improvements in information technology have led shippers to actively expand their international operations, dramatically altering their expectations of freight forwarders. Large international shippers with complex supply chains still insist on low rates and on-time service but now they also expect forwarders to provide customs brokerage and multi-modal, one-stop shopping for logistics services. In addition to increased client expectations, competition across modes such as integrators (e.g., FedEx and UPS) and ocean shipping lines (e.g., APL, Maersk, NYK, SeaLand) has fostered rapid consolidation within the freight forwarding industry. These all point to the eventual disappearance of industry barriers between forwarders, international carriers, and logistics providers. Thus, the evolution of intermediaries into broad-based contract logistics providers will increase overall competition.

Clearly, progress is being made by governments and business working in the complex area of international logistics. Next we examine how this complicated environment is altered for international firms operating as e-businesses.

Challenges and Solutions in International E-Business

If the Web makes any company instantly global, then why don't more e-businesses ship overseas? Why don't more companies make their Internet-powered supply chains globally accessible? The complexity of international logistics increases exponentially for e-business firms. The overarching problem is that companies cannot manage the complex logistics, financial and regulatory requirements of global trade.

Our general recommendation is that international firms adopt a best practices approach to e-commerce. Almost all best practices (i.e., adapt to customer needs, personalize sites, build trust) for domestic e-business are applicable in the area of international e-commerce. However, several practices have particular potency in the global arena. The best web sites are simple, and are easy to navigate. Simplicity is even more important in the international

environment because of the inherent complexities of cross cultural communications. The use of focus groups consisting of people of from different countries, e-mail surveys and the statistical analysis of usage patterns should be conducted throughout the lifetime of a web site (Anonymous 2000). In the following section specific problems and potential solutions are discussed.

Cost Uncertainty

Problem

As mentioned earlier, about 85 percent of American e-retailers cannot fill international orders because of barriers faced in cross-border commerce. These include local taxes, different currencies, language barriers and customs procedures (Parker 2000). One of the biggest barriers to e-tailing in international markets is cost uncertainty. Continually changing duties, taxes and other landed costs makes international pricing quite difficult.

Pricing in multiple currencies in international e-commerce is particularly challenging. Most online businesses don't want to assume the risk of currency fluctuations between the time the customer's bank authorizes a credit-card transaction and when the sale's proceeds are deposited into the merchant's account. Therefore, extremely accurate and updated exchange rates must be continually fed into Websites. To make matters worse, online businesses cannot quote only the approximate customer charges because most countries prohibit this type of "ballpark" pricing. This issue is related to the landed cost calculation discussed below where logistics costs could be a big part of uncertainty in the whole formula.

The data infrastructure required to provide real-time, online shipping cost calculations for international e-commerce is very complicated. Input requirements include information about ever-changing regulations, taxes like the value-added tax (VAT), various duties, and many other components of the landed cost. These data requirements are much less of an issue in traditional international trade due to the long time frame and the number of interactions allowed among the parties involved.

Solution

ClearCross Inc., a New York-based supply-chain and e-commerce software developer, offers e-tailers a potential solution to cost uncertainty. ClearCross has created a Landed Cost Engine (LCE). Using data from e-tailers, the LCE calculates tariffs, duties and other landed costs in real time, over the Internet, on a transaction-by-transaction basis (Gregory 2001).

LCE helps to solve the cost uncertainty problem because people buy imported goods for reasons such as brand, increased functionality or features, better performance, or simply lower total cost of ownership (even though the shipping cost is higher). For products of similar brands, features, and performance, customers are mostly concerned with the total cost of ownership (i.e., after receiving and being able to fully use the product or service). That is exactly why the LCE is so important in international e-business – product price is no longer the major part of the total cost of ownership.

An even more comprehensive solution for dot.coms is looming on the horizon. CommerceZone plans to establish local portals in overseas markets that will lead international customers to the Websites of U.S. retailers. In a third-party capacity CommerceZone will handle payment and reconciliation of customs duties, tariffs and value-added taxes, providing customers a guaranteed total-landed-costs calculation in their local currencies.

Warehousing

Problem

Although some believe that international e-business logistics are not different from international mail order logistics, Todd Carter, vice president of customer solutions for GATX Logistics Inc., suggests this really isn't so. He contends that e-commerce is very different from both traditional retail and mail-order businesses. To manage faster throughput, entirely different warehousing layouts are necessary

because customized, smaller and more frequent batch sizes are required. Carter asserts that what is needed does not even resemble the old model of warehousing.

Solution

Manufacturers and wholesalers want consignments delivered fast to schedules that should normally, but not always, be predictable. Warehouses dealing with Internet orders need to handle small volumes of dissimilar items efficiently and accurately using streamlined picking and dispatch processes (Tyler, 2000). Fortunately, many B2B firms have gained such experience through previous use of the electronic data interchange (EDI) systems that were devised for just-in-time (JIT) deliveries.

For international e-tailing to succeed, logistics support has to be tailored to the "bulk in, singles out" need. International e-tailors can also solve warehousing problems by using local or regional fulfillment centers. For instance, Shipper.com is building fulfillment centers in nine metropolitan areas, much like WebVan is doing for groceries. These centers will be used to warehouse goods for e-retailers and express-deliver them to consumers for the price of the typical five-day ground shipment. In many cases, Shipper.com will be able to ship the same day an item is ordered. Another example is Amazon.com, which serves the U.K. and German markets from its U.K. and German-based subsidiaries, which consist of distribution centers and customer service centers.

For smaller firms that cannot afford to set up a distribution/fulfillment center in every country they do business in, third-party logistics (3PL) service firms can provide a way to handle the warehousing component international logistics.

Timely Delivery

Problem

Speed, fulfillment and cost-of-delivery appear to rule in the new e-business-to-consumer market (Jedd 2000). Customers in the e-commerce world have higher service expectations compared to customers of traditional retailing. Compared with the U.S. domestic market, international fulfillment appears to be a black hole. Most "global" e-businesses ship to just a few countries in Europe and Asia. Of the globally incapacitated, 75 percent cite their systems' inability to register international addresses accurately or price total delivery cost. For instance, users checking into a Web site to purchase products expect full product availability, timely delivery, quality packaging, complete order accuracy, and ease of returning the products. E-commerce customers are addicted to real time information and continuing visibility about their orders. Thus, providing order tractability is a necessity rather than a luxury in e-commerce. This, unfortunately, requires all parties (suppliers, carriers, 3PLs, etc.) involved in a supply chain to be fully integrated with the Internet capabilities needed to provide this information.

In addition, in international business where freight is damaged or lost more often, cycle times get longer, and other operating errors occur with greater frequency, carrier or logistics companies need to understand which logistics service attributes are more important to e-business clients and plan their operational focus accordingly. In general, previous research clearly shows that the reliability of delivery is more critical than the speed of delivery. The reason for this is that time-definite transportation makes it possible to plan just-in-time material flow (Anonymous 2000; Saccomano 1999).

Solution

To deal with the issue of customer responsiveness and shipment tracking in international e-commerce, several basic steps are required (Seideman 2000). First, it is vital to communicate to customers the importance of planning early so that on time delivery can be assured. This means that customers must be educated about complexities of timely delivery in the international context. Second, make system integration an absolute priority. The dependence of logistics operations on accurate and timely operational data suggests that everything from the software packages to the database systems that an e-business uses must be fully integrated within the firm and across its supply chain partners. Third, build the best, most compatible databases possible.

Databases are the essential ingredients of e-logistics operations. Not only must they be fully integrated into whatever systems a firm is running, they must also be scalable, so that they can expand to meet a growing business' needs. For instance, Dell Computer sells direct mainly to business end users from its manufacturing base in Limerick. Sales orders are then downloaded from the Internet three times a day and, from there, the computers are scheduled, built and dispatched. Because the factory has no storage areas, finished goods go straight onto the lorries. Through sharing information with trusted suppliers online, the manufacturing department is able to carry just six days' worth of raw materials and components inventory.

By combining speed and reliability, supply chain managers can devise inventory strategies that counter the uncertainty of demand with the certainty of supply. For logistics companies servicing international e-businesses, proper inventory management and timely delivery are basic requirements in order to maintain customer loyalty and control costs.

Reverse Logistics

Problem

Reverse logistics (customers returning the products) are also a nightmare for an e-commerce firm. Companies typically do not have the efficient means and locations to handle returns, unlike a brick-and-mortar firm. For many domestic e-commerce businesses such as Works.com, returns are typically less than 3 percent of the total purchase. However, between 20 percent and 40 percent of all Internet-ordered items are returned because they are faulty, damaged in transit, or simply inappropriate. It has been estimated that return rates on international shipments are as high as 30 to 50 percent (Parker 2000).

Solution

Two notable international logistics trends should help to alleviate the reverse logistics challenge. First, there is an increase in one-stop shopping for third party logistics services such as 3PL providers (e.g., Ryder Logistics) and freight-forwarders (Seideman 2000). Global trade is a fertile breeding ground for third party logistics providers. Nowhere is the trend toward outsourcing logistics stronger or more logical than in global commerce. Experienced 3PL providers can give smaller firms (shippers) a more level playing field, by offering similar international capabilities that large multinationals have. According to a recent survey by Mercer Management Consulting, the number of companies using third-party logistics services in Europe climbed from 76 to 84 percent between 1996 and 1997. In North America, the increase was from 58 to 69 percent. 3PL revenues grew 20 percent in 1997 to $34.2 billion. In 2000, that number was estimated to reach $55 billion.

Second, there is a rapid increase in integrated express air cargo companies. The top six global carriers – UPS, FedEx, Emery Worldwide, Burlington Air Express, Airborne Express, and DHL – had 70 percent of the 69.7 million total air export shipments in 1995 and reached approximately 82 percent in 2000. These firms are integrated in the sense that they provide shippers with full logistics services. These include: transportation, warehousing, customs clearance, freight tracking and tracing, the ability to provide and control information, order purchasing, inventory control and even assembling merchandise (Anonymous/Caldwell 1997).

Fraud

Problem

Fraud represents another major challenge for international e-businesses. In most developed countries the use of credit cards has minimized the risk to businesses of customer fraud. However, customer fraud is high for international e-commerce transactions with online merchants. This is because customer addresses are impossible to verify and the responsibility of fraudulent charges on credit cards often resides with online merchants. In Japan web security has become a major concern. This, plus exorbitant fees levied by credit-card companies, has discouraged Japanese consumers from purchasing

online. As a result, Japanese web sales are only about 6 percent of American sales.

Solution

Best practices concerning web security are essential for international e-business firms. An important source of information on web security is "E-Commerce Security-Enterprise Best Practices," published by Deloitte & Touche. These best practices, which are entirely applicable to international e-commerce, can be summarized as follows:

Establish a process whereby participants in an e-commerce transaction can be identified uniquely and positively. Put procedures in place to control changes to an e-commerce presence. Maintain logs of e-commerce use, and have responsible personnel monitor them. Put features in your e-commerce applications to reconstruct the activity performed by the application in case information is lost. Make sure you have a way to ensure confidentiality of the data communicated between customers and vendors. Put features into your system architecture to prevent components from failing and to repair themselves if they should fail. (Williams 2000)

American Express, has successfully addressed the problem of customer fraud by conducting original research in an effort to identify best practices for secure e-business transactions. It has formed the E-Commerce Fraud Prevention Network through which it provides e-commerce firms with the tools needed to blunt customer fraud. Tools include the creation of secure web sites and the validation of customer shipping addresses (Hartnett 2000).

Conclusion

The logistical barriers which may impede the successful development of global e-business represent the dark side of international e-commerce. Many firms attempt to focus on their core business and outsource their international logistics functions. Unfortunately, given the current state of international logistics, it may be somewhat premature to believe that international e-business can currently turn over the international logistics/distribution aspects of their business to others. What is needed is an awareness of global logistic trends and practices in order that an effective and efficient international e-business logistics strategy can be formed, implemented and monitored.

E-commerce can give companies in industry sectors or countries the opportunity to provide superior customer service (a major component of a firm's logistics arm), but it can also serve as a cost cutting strategy (DeCovny 1998; Saunders et al. 2001). E-commerce has radically changed the way in which companies reach and engage their customers. In the case of international e-commerce with the language capability of the customers (e.g., if the Web site is multilingual and is supported by multilingual customer service staff), customer service would be better than that in traditional international trade environment, since the e-commerce can provide timely, contents-rich, information to customers. For instance, companies can reduce costs by launching an online catalog, which eliminates two major expenses: printing and distribution, and people to capture orders. Customer service is also less expensive on the Internet, because customers can look up their own orders and find order tracking information even outside of business hours. This easily translates into fewer calls into call centers, fewer overtime hours and customer service representatives.

In addition, while language and cultural differences are major obstacles confronting multinational firms, such differences are less important in cyberspace. This is because the primary language of the web is English. In order to be competitive firms must have English language web sites. The availability of translation software has made it easy to fulfill this requirement. Moreover, communicating with global customers over the Web is easier, not more difficult, than is cross cultural communication in traditional venues. Once again, translation software used in conjunction with e-mail has simplified the communication challenge.

As pointed out earlier, the absence of well-accepted regulation on international e-commerce presents both opportunities and challenges. Within this kind of

context and environment, a multi-domestic logistical strategy seems to have higher chance of success than a uniform international logistical strategy. Examples of multi-domestic logistical strategy abound, including those of Amazon.com, Dell and DHL. Because of the lack of enforcement authority by supranational organizations it is unlikely that this situation will change.

E-businesses wishing to operate in the emerging global environment need to be able to react quickly, both (1) to take advantage of new opportunities for sourcing or sales and (2) to deal with the sudden emergence of new or unexpected problems. This suggests that supply chain/logistics management is a major component of building customers, efficient logistics strategies may prove to be more important than brand names in finding and keeping internet consumers (Parker 2000).

The implication for global logistics companies is equally compelling. In order to better serve their e-business clients, broad-based contract logistics providers need to offer value-added services like Web-trackable, time-definite delivery, and customized logistics solutions. For an e-business to succeed globally, it needs a logistics network which can provide exact inventory (no matter where the customer is located) and instantaneous information. Internet e-business promises much; effectively, efficiently and strategically managing the logistics function is what will allow e-commerce to "deliver".

In summary, we suggest that successful international e-businesses pursue multiple logistics strategies. This means staying sensitive, innovative and flexible in designing, implementing and monitoring global logistical strategies. While the logistical problems faced by managers of international e-commere firms may seem daunting, cutting edge solutions to these problems are being generated by people working in the logistics field.

REFERENCES

Akhter, Syed and Pervaiz Alam. (2001), "Information Acquisition and Investment Decisions on the Internet: An Empirical Investigation," *Marketing Management Journal*, Vol. 11 (1) Spring.

Anonymous. (2000), "Creating the Right E-Business Model," *Chief Executive*, New York, February, 30-31.

Anonymous/Caldwell, "Transportation Policy is Key to Global Trade," *Transportation and Distribution*, June, 84-90.

Biederman, David (2000), "The LCE Has Arrived," *Traffic World*, January 10, 18.

Cullen, J.B. (1999), *Multinational Management: A Strategic Approach*, Cincinnati, OH.

DeCovny, S. (1998), "The Electronic Commerce Comes of Age," *The Journal of Business Strategy*, Vol.19, No.6, (Nov/Dec), 38-44.

Drucker, P.F. (1962), "The Economy's Dark Continent," *Fortune*, April, 265-270.

Gregory, Annie (2001), "E-fulfillment is Delivering ... Oh No It Isn't!," I, 54 (3), 20-24.

Hamill, J. (1997), "The Internet and International Marketing," *International Marketing Review* Vol.14, No.5, 300-323.

Hartnett, M. (2000), "New Anti-Fraud Initiative Focuses on E-Commerce Transaction Security," *Stores*, Vol.82, No.12, (December), 64-66.

Janjaap Semeijn and David B. Vallenga, (1995), "International Logistics and One-Stop Shopping," *International Journal of Physical Distribution and Logistics Management*, 25(10), 26-34.

Jedd, Marcia (2000), "Reverse Logistics Online: Returns Happen," *Inbound Logistics*, 20 (2) Feb., 22-30.

Johnson, John R. (2000), "Surviving the E-Commerce Transition," *Warehousing Management*, 7 (11), WM3-WM6.

Mendenhall, M., B.J.Punnett and D. Ricks, (1995), *Global Management*, Oxford, Blackwell Publishers.

Neipert, David M. (2000), *A Tour of International Trade.* Upper Saddle River, NJ: Prentice Hall.

Nitish, S. and S. Kundu, (2002), "Explaining the Growth of E-Commerce Corporations (ECCS): An Extension and Application of the Eclectic Paradigm," *Journal of International Business Studies*, Vol.33, No.4, 679-697.

Parker, John (2000), "In the Global Zone," *Traffic World*, March 13, 20-21.

Saccomano, Ann. (1999), "So You've Got a Web Page. Now What Do You Do?" *Traffic World*, 259 (4) (July 26, 1999), 28-30.

Samiee, S. (1998), "Exporting and the Internet: A Conceptual Perspective," *International Marketing Review*, Vol.15, No.5, 413-426.

Saunders, Paula, Brown, Herbert, Brucker, Roger, and Richard Bloomingdate, (2001), "Disintermediation and the Changing Distribution Landscape," *Marketing Management Journal*, Vol.11(2).

Seideman, Tony (2000), "Weapons for a New World," *Logistics Management and Distribution Report*, Aprill, E33-E36.

Tyler, Geoff (2000) , "Get Up to Speed," *Supply Management*, 5(6), March 23: 41-43.

Williams, Kathy (2000), "Preparing Your Business for Secure E-Commerce," *Strategic Finance*, 21-23.