

ADOPTING E-BUSINESS IN SMALL AND MEDIUM ENTERPRISE

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ABSTRACT

Companies have grown significantly due to the Internet and electronic business (e-business). E-business has become a part of everyday life for individuals and organizations. E-business systems used to be costly and only large organizations could afford to implement them. The recently developed information technologies including web-based applications have made e-business systems cost effective and easy to implement for medium and small enterprises (SMEs). For the purposes of this paper, a small business is defined to have fewer than 250 employees, and a medium size business is defined to have fewer than 500 employees.

There are many processes involved in e-business systems to help SMEs to set up a successful e-business network. Some of the critical processes found in large organizations can be equally important to SMEs. This paper will focus on the introduction and discussion of Supply Chain Management, Transaction Processing Systems, and Customer Relationship Management. We will include examples of small and medium size companies which have successfully implemented these e-business processes, and specific challenges which they have had to meet.

The benefits derived from e-business systems are vast and can be applied in areas such as shipping, sales, advertising, supply chain, and electronic data interchange. SMEs are finding implementation of e-business systems a necessity to compete in the marketplace. In contrast to the benefits derived from the applications of e-business systems, the openness of the e-business systems has increased SME vulnerabilities to fraud and theft. These disadvantages also raise concerns about privacy and policy to SMEs' e-business operations. Advances in technology are expected to reduce SMEs' vulnerabilities and increase the benefits and applications of e-business systems. We conclude with the challenges we see for e-business in SME's will be in the future.

INTRODUCTION

Electronic business (e-business) has become a part of everyday life for individuals and businesses. Advances in technology including web based technology have made e-business cost effective and easy to implement for even small businesses. The benefits and applications derived from e-business are vast and can be applied in areas including shipping, sales, advertising, supply chain, and electronic data interchange. Businesses are finding implementation of e-business a necessity to compete in the marketplace. In contrast to the benefits derived from the applications of e-business, Internet technologies have increased individual vulnerabilities to fraud and theft and raised concerns about privacy and policy (Magid, Tatikonda & Cochran, 2009). Advances in technology are expected to reduce individual vulnerabilities and increase the benefits and applications of e-business. RFID is a current technology being implemented, tested and improved and are expected to shape the future of electronic commerce.

HISTORY OF E-BUSINESS

E-business refers to the process of exchanging goods, services, and payments through electronic transactions typically performed through electronic data interchange (EDI), virtual private networks (VPN's) or the Internet. The origins of electronic business transactions or e-commerce can be traced back as early as 1910 when a group of florists developed a network utilizing the telegraph to exchange "out-of-town" orders for floral arrangements. This network developed into the "Florists' Telegraph Delivery" group which still exists today as FTD Inc (Hayes, 2002).

The next major development in e-business came in 1948 during the Berlin airlift. Tons of food and supplies were flown to West Berlin, Germany by the United States as a result of Soviet road and railway blockades separating East and West Germany. The airlift required manifests to track the shipments of the supplies but the current manifest system had multiple forms making it difficult for timely processing of the complex tracking. As a result, U.S. Army Master Sgt. Edward A. Guilbert developed a "standard manifest system that could be transmitted by telex, radio-teletype, or telephone" (Hayes, 2002) allowing for electronic shipping transactions of the supplies. Guilbert took this concept to DuPont Co. in the 1960's and helped develop another standard electronic system for delivering order/shipping information between DuPont and one of its suppliers, Chemical Leahman Tank Lines. Electronic manifest systems flourished in the shipping industries for the next three years. The Transportation Data Coordinating Committee (TDCC) was formed in 1968 to set up standards among industries (not just the shipping industry). In 1975, they published the "first electronic data interchange (EDI) specifications" (Hayes, 2002).

Electronic Data Interchange (EDI) refers to the transfer of business information through computers using a standard format. Businesses rely on the telecommunications infrastructure, an early version of e-business network, to carry out the information exchange of EDI. When EDI first began being utilized, many companies developed their own proprietary EDI protocols. Only vendors or other business affiliates that had the same corresponding system could use these protocols. Therefore, typically only the largest companies who could afford to develop these protocols used EDI specifications. Value added networks (VAN's) was hence developed during this time by third party companies. They provided the EDI connection between businesses that did not have the appropriate capacity or means to develop one. Even so, the applications of EDI were kept developing throughout the shipping, food, automotive, and retail industries. As the use of EDI grew, more and more companies demanded their vendors or suppliers utilize these systems. As a result, a universal public EDI standard was developed called ANSI X12 in 1984 (Weisman, 2000). ANSI X12 is a standard that allows certain software programs to send information from one company's computer system to another company's computer system, which contains software programs capable of receiving and disseminating the information. ANSI X12 is still used today in the United States by many of the large corporations, which have invested on the expensive setup and implementation of the system (Millman, 1998). Other EDI standards such as the United Nations Electronic Data Interchange for Administration (UN/EDIFACT) were developed and are still used today primarily outside the United States.

The U.S. government in 1991 lifted restrictions on commercial use of the Internet. Tim Berners-Lee at CERN, a Swiss research lab, developed the first Internet web browser utilizing hypertext markup language (HTML) also in 1991 (Hayes, 2002). In 1992, Marc Andreessen, from the University of Illinois, began creating the "Mosaic" Web browser, which allowed for point and click access to the Internet (Weisman, 2000). The Mosaic browser was used in the Netscape's Netscape browser; which rolled out in 1994. It provided a cheap software alternative for easy access to the Internet. Netscape subsequently developed an easy communication tool for e-business transactions. In 1998, a company named SBC Communications, was the first ISP company to offer a high speed Digital Subscriber Line (DSL) to residents in California. DSL offered a broadband width and allowed for continuous connections to the

Internet with dial-ups (Weisman, 2000). With the advent of Internet protocols that allow anyone to make business transactions with another individual or company, small businesses now had a means to conduct e-business without utilizing EDI or VAN's. This spawned a strong incentive to entrepreneurs and small businesses to utilize existing e-business or even develop their e-businesses. In 1995, two entirely on-line e-businesses were launched: eBay and Amazon.com.

By the end of 1998, on-line companies were flourishing in the United States. On-line retailers such as Amazon.com and America On-Line saw over \$1 billion in annual sales. The on-line retail spending would reach the \$20 billion mark signaling a new age in commerce, the so called new economy (Weisman, 2000). In August 1999, Red Hat, a seller of Linux software, launched its IPO and met with much fanfare. The Linux software offered an alternative to Microsoft's Windows operating system. Linux was based on open source code and could be customized by the end user. It sent a signal to Microsoft that the e-business community is willing to use other systems to conduct their business (Weisman, 2000). In August 1999, Napster, an on-line company, offered electronic music files for free downloading to its customers through the Internet (Anonymous, 2006). This marked the beginning of consumer e-business. Consumers dictated what they wanted from the music industry. The Napster's e-business service set yet another milestone in e-business history (Becker & Clement, 2006; Weisman, 2000). In January 2000, AOL and Time Warner announced their merger deal. The merger brought together a new e-business based company with a traditional company (Weisman, 2000).

In February 2000, many of the major e-business companies such as Yahoo, eBay, and Amazon.com were attacked by computer hackers (Weisman, 2000). These attacks raised huge attention to many that the Internet security would be pivotal in sustaining a successful e-business. On May 10th, 2000, the U.S. government extended the net tax moratorium on e-business allowing companies to continue conducting business through the Internet without being taxed by the government until 2005 (Weisman, 2000).

By the end of 2000 the Internet based e-business boom came sharply to an end. Most of the e-business start-ups had lived through amazing times where they saw sky high IPO's with the promise of "unprecedented" growth and a subsequent over investment in those companies whose fundamental business plans were flawed. People had invested in the technology and idea of e-business and not necessarily the product or service that was being offered. However, certain e-businesses did survive the fall of the "dot-coms" such as Amazon.com and eBay. The business-to-business (B2B), business-to-customer (B2C), customer-to-customer (C2C), and even peer-to-peer (P2P) e-businesses are here to stay. Currently, B2B continues to be the largest piece of the e-business pie. In 2001, a version of XML was created called ebXML, which combines the most sought after aspects of EDI with XML features to provide an even easier portal for e-business applications (Hayes, 2002).

Electronic business has certainly come a long way in its relatively short stage. The effect of e-business has not only changed the way many companies perform business but also has affected society as a whole. Companies will continue to utilize e-business to develop new markets and to continually increase processing speeds of their product or service. Already, individuals have been presented with new ways to purchase goods or services as well as providing a real time impact on the supplier as in the case of Napster. The future of e-business is certainly bright. After bursting on the worldwide scene and then subsequently falling, e-business companies will now tailor themselves into the more traditional manner of providing a product or service that is satisfying to the customer. In combining sound business plans with e-business technologies, companies are expected to at least maintain their competitive advantages.

TECHNOLOGY OF E-BUSINESS

The technologies that surround and make e-business a reality are primarily structured around two applications: electronic data interchange (EDI) and the Internet. Both EDI and the Internet use telecommunication infrastructures to provide the electronic connections for information transactions. The traditional infrastructure lines are blurring. However, wireless infrastructures and networks are becoming more widely spread. EDI, as stated earlier, was developed as a standard format (ANSI X12 or UN/EDIFACT) to allow software programs of one company to transmit information to another company's computers, which would be interpreted by another software program. EDI was, and still is, primarily used by large companies that could afford to set-up and implement the EDI systems in the late 1980's and early 1990's. Small companies were rarely able to partake in using EDI because of the formidable cost of implementation. Many companies would have to use value added networks (VAN's), which were provided by the third party companies.

The Internet originally began as a network (ARPANET) for the U.S. department of defense. The National Science Foundation used ARPANET protocols in 1985 to build a network for universities. As universities and other institutions began linking to this network, many began building more networks using a universal protocol and linked those networks to the existing ones. The universal protocol that allowed for the networking and information transfer between other computers and networks was called transmission control protocol and Internet protocol (TCP/IP). From this beginning of the standard protocol, the Internet was born. The advent of hypertext markup language (HTML) by Tim Berners-Lee at CERN spawned the development of the World Wide Web. World Wide Web, or called Web, has quickly become a universal protocol for sharing and transferring information between people and companies on the Internet. Aided by the advancement of web browsers, small businesses could now use the Internet as an economical alternative to EDI or VPN and could participate in e-business endeavors (Pearlson and Saunders, 2006).

Since the introduction of the World Wide Web e-business has infiltrated into almost every existing business application. With the limited bandwidth, e-business applications faced a hurdle – slow speed for taking off. One final technological breakthrough was needed to allow for the e-business explosion – the availability of broadband channels. Broadband channels are typically cable or fiber optic lines that provide a wide band of frequencies and allow for more data to be transferred at one time. With broadband connections, information transfer via the Internet is no longer a slow endeavor and e-business starts flourishing.

E-business technologies are continuing to expand everyday at a rapid pace. Some of the newer technologies include 'Web services', interactive company portals (ICP's), collaboration software, videoconferencing, and voice-over IP. Other emerging technologies are constantly being developed to enhance existing e-business applications such as web browsers, e-mail, and instant messaging. The IT manager must consider the business strategy and the e-business plan to develop e-business architecture to handle the transactional needs of the company. The e-business infrastructure that is ultimately implemented must contain applications for web directory services (such as search engines), electronic payment transfer, e-business servers, security software, and personalization software (Pearlson and Saunders, 2006).

One of the major technologies affecting e-business today is "Web services". Web service refers to software that allows different computer systems to communicate with each other through the Web either within a company or between companies. Web services are based on extendible mark-up language (XML) and simple-object-access protocol (SOAP), which are known open standards commonly used throughout the Internet (Loftus, 2003). Using open source languages and standards increases a company's flexibility in customizing their web applications. Without open source languages and standards, a company would have to create their web applications using some other company's proprietary programs or standards. Companies usually end with paying a high price for the use of the proprietary programs or even outsourcing the entire development of the Web site altogether. Web services uses application program

interface (API), a set of routines, protocols, and tools for building and enhancing software applications (Hirsh, 2002).

Some of the companies that are developing Web services software such as BEA Systems Inc (now acquired by Oracle), Microsoft Corp. using its .net platform, and IBM using its WebSphere platform. Many of these Web services developers are adding tools to the software packages that allow independent programmers and web developers to modify, enhance, and create their own web applications (Loftus, 2003). Certain companies that are not in the software development business have begun creating Web services for their e-business Web sites. Amazon.com has created a Web services 'toolkit' (Amazon Web Services 1.0) and offered it to many of their online vendors and third party programmers. The kit allows the vendors and programmers to connect directly to a group of around 900,000 e-business Web sites that link to Amazon.com. The kit also allows third party programmers access to some of Amazon's databases as well as to some Web site modification or tailoring (Ricadela and Joley, 2004). This association, built using Web services, offers the vendors more products to sell and a direct line to Amazon.com for help. In return, Amazon.com receives more retailing channels to sell directly through as well as more control over the selling Web sites. Recently Amazon.com has decided to enhance its Web services package with the release of Web Services 4.0 (Loftus, 2003). E-Bay Inc. is another example of a company that made the API of its Web services software available to the public. The kit offered by eBay will work with Web development software from major companies, such as Microsoft, as well as with companies that develop software using open source code (Java programming language). Companies such as Amazon.com and eBay are "turning themselves into software development hubs" with the ultimate outcome of creating "programmable Web sites" that are tailored to the retailer and even the individual customer (Ricadela and Joley, 2004).

The application of Web services is taking hold throughout e-businesses as well as traditional businesses that perform some aspect of e-business. There are certainly some concerns with opening up company's databases and allowing third party programmers access to customized functionalities and services of their Web sites. One of the glaring concerns with Web services is security. Two companies that have worked to develop standards for Web services security are Oasis of Billerica, Massachusetts and VeriSign of Mountain View, California. Development of security standards and software provides companies with the first step in creating a secure environment for the use of Web services (Loftus, 2003).

Another newer technology in e-business involves interactive company portals. These portals provide a shared real-time environment facilitating the interaction between businesses for transactional information, billing and payment, and invoices (Hiesh, 2002). The advantages to having real time information and transactions can have a huge effect on ticket reservation, production scheduling, material shipment, and inventory efficiencies. Interactive company portals make these advantages possible through process improvements from the streamlined information exchange.

E-business technologies are not just confined to Web site and Web browser enhancements. Some other technological ideas to foster e-business come in the form of portable or temporary e-business points of interaction. One such example is called kiosks. Kiosks could help customers who want to learn more about a specific product they see online but don't live close enough to a store and don't want to buy off the Web site information. A kiosk could be placed in areas where a company's retail outlet does not exist. It allows consumers to access more information about a product or service. The kiosk can be utilized to "turn ATM's into product-selling machines" – offering banking services such as loans and mortgages in remote locations (Hirsh, 2002). Finally, wireless, e-mail, and instant messaging technologies can be made more secure allowing for more transactional activities using various e-business systems. Technologies supporting e-business will certainly continue to grow well into the 21st century. The key to success for a business looking to support its e-business initiatives is to develop its e-business architecture around a sound business strategy and organizational strategy (Pearlson and Saunders, 2006).

APPLICATIONS OF E-BUSINESS

In the past decade, businesses conducted worldwide have been transformed with the advent of a new and exciting medium, e-business. The Internet has been one of the most important inventions to provide users with various communication tools. It has the power to change not only how people communicate, but also how they do business and exchange goods and services. E-business is the natural result of businesses wanting to grab hold of this exciting new technology and use it to their benefit. As we will show, there are an almost endless number of applications for e-business strategies (Bharadwaj & Soni, 2007).

There are six basic business models that deal with e-business on the Internet. These six basic business models are Business-to-Business (B2B), Business-to-Consumer (B2C), Business-to-Employee (B2E), Business-to-Government (B2G), Consumer-to-Consumer (C2C), and a Hybrid which combines both the B2B and B2C models (Pearlson and Saunders, 2006). Each of these different models represents a buyer and a seller through which goods, services and information can pass through the Internet. The B2B model focuses on the relationship between two businesses and is characterized by internal products and services or the sharing of knowledge. The B2C model focuses on the relationship between business and the consumer in the marketplace. This is probably the most recognizable model for most people. Websites that sell goods and services to consumers fall into this broad category. The B2E model focuses on the relationship between business and its employees. This is typically an internal form used by business to communicate and allow transactions to occur within the organization. The B2G model focuses on the relationship between business and government. This model has made rapid gains as the government is looking for ways to streamline its purchasing. Finally, the C2C model focuses on the relationship between consumers and other consumers. This is categorized by the rise in the popularity of online biddings and auctions. In this section we are going to focus our attention on five areas where e-business applications have had the most impact. They are shipping, sales, advertising, supply chain and electronic data interchange.

E-Business and Shipping

One area that has been benefited tremendously by the advent of e-business is shipping. The two biggest shipping companies in this country, UPS and FedEx, have both grabbed hold of this new technology and committed a great deal of time and money into providing new services to their clients. The FedEx service application "Ship Manager," offers the following features: tracking, inkjet or laser-printed shipping labels, address book, fast ship, courier pickup, FedEx ShipAlert, shipping history, courtesy rate quote, and quick cancellation (FedEx, 2009). The UPS service program "ConnectShip," provides the following benefits: increase operational efficiency by removing costly manual steps to bridge different systems, reduce overall cost of systems management by centralizing shipping functionality, reduce training and support efforts by integrating shipping processes into existing enterprise systems, and finally Improve shipping management as a result of timely, accurate shipping data (UPS, 2009). E-business has helped to revolutionize the way that shipping transactions are handled online. The primary benefits are increased shipping and package "awareness," instant tracking, greater efficiency, and more accurate shipping information. While these are just two systems offered by two competing companies the possibilities of e-business shipping is quite appealing.

E-Business and Sales

Selling is still probably the most widely used format for e-business today. Most Web sites are devoted to selling someone something, whether it is B2B or B2C. While there are business that exclusively sell their products and services online (called Etailers), most online sales are still generated from the online arm of traditional "brick and mortar" businesses. Websites are the electronic storefront for people who want to

shop and browse from the comfort and convenience of their homes and offices any time of the day or night (24/7). That is the major reason why online sales have been so popular, the convenience factor. Websites are available 24/7 to consumers in a worldwide marketplace. Consumers can do targeted searches and compare items with the push of a button. Especially during the holiday season more and more shoppers have decided that they would much rather shop from their own homes rather than fight for a parking space at a mall and then fight the crowds of people in the mall. Another advantage to an online storefront is the ability of the seller to display its entire product line. This is simply not possible in a traditional brick and mortar setting. Many major brick and mortar heavy weights have redesigned their main pages and revamped their consumer websites to align with the themes and formats of their traditional stores (Weinberger, 2004).

E-Business and Advertising

The Internet revolution and e-business has also played a major role in the way that products and services are advertised. Traditionally companies have been limited in how they advertise their products and services to consumers. They would have to take out expensive and slow print media advertisements in newspapers and magazines or possibly advertise a limited selection of sale products on the radio or television. The other alternative for companies was to produce a bulky and expensive yearly catalog of their full product line. Problems arose regarding the companies only being able to show off a small selection of their goods and services to a narrow slice of the marketplace. Also, if mistakes were made in printing, they were slow to be fixed and customer service lagged as a result.

Advertising has now been revamped and has fully embraced e-business. Businesses can now have an inexpensive website which details their full line of offerings which consumers can browse anytime they like. The information is easy to update and changes in price can quickly be made online. Business can also now advertise their goods and services to a global market through their websites. This allows them to reach far more people than they could with previous advertising campaigns. Some sites offer online-only discounts and sales to attract consumers to their sites.

E-Business and the Supply Chain

The supply chain, like other applications changed by e-business, has gone through dramatic changes over the past few years. To begin with, traditional supply chains that relied heavily on human intervention, slow paperwork, inaccurate data and delays in processing have been replaced with online systems. For the most part the human touch has been minimized in new online supply chains. The request is still entered into a website or database by people, requests are approved by people, and ultimately orders are fulfilled by people, but all in different ways than used to be. A typical system will have an input screen where buyers place accurate orders with their vendors. The request is sent to internal management for approval and then e-mailed or sent electronically to the vendor. The vendor then receives the order instantaneously, the data is either manually input into their systems or is done automatically. The order flows swiftly and accurately from the supply chain management systems. Other benefits include better inventory transparency and better forecasting of inventory needs.

The overall costs of the supply chain are drastically reduced. The speed and accuracy of the orders are increased. The overall satisfaction of both parties is increased as a result. There are many examples of successful supply chain partnering between businesses and vendors. Wal-Mart and Levi Strauss formed a partnership back in 2003 to become supply chain partners. Levi Strauss would supply their goods and Wal-Mart would sell them in its 3,200 stores (Girard, 2003). A high degree of cooperation and coordination was required to make the partnership work. In the end it should allow both companies to reduce cost and increase profits.

E-Business and Electronic Data Interchange (EDI)

Electronic Data Interchange is similar to supply chain partnering in the sense that it is a mutually beneficial setup for all users. EDI is a computer-to-computer exchange of business data using a public standard. Businesses agree to send information electronically using this public standard. Information such as request for quotes, purchase orders and invoices are all set electronically. The businesses that agree to use this EDI are referred to as “Trading Partners.” They are expected to share the benefits of this EDI system. These expected benefits are faster processing time, more accurate information and ultimately lower costs than using the traditional paper forms. The United States government has taken an active role in the use of EDI and has instituted its use throughout.

E-BUSINESS CONCERNS

The Internet and related technology have made e-business and its applications a reality. In contrast to the benefits of e-business, the Internet technology has increased customer vulnerability to fraud, theft, and loss of privacy (Magid, Tatikonda & Cochran, 2009). The threats posed by the Internet technology and e-business cause great reluctance among consumers to utilize the web in transacting business. Research has found that over 67% of customers terminate transaction by abandoning the web site when asked to provide personal information and credit card details (Brendon, 2002).

Fraud in E-Business

Companies must build relationships of trust with consumers to expect long-term success in the e-business market. To gain customer satisfaction, a company must deliver the product or service the customer expects and offer interaction that meets or exceeds customer expectations. The Internet technology and e-business make it possible for a company to reap a big profit in the short-term even if the company is fraudulent in its description of the product or service being sold. The possibility of short-term financial gain has greatly increased the number of “fly-by-night” companies. To help facilitate exchange and educate customers, many companies like e-Bay and Yahoo shopping offer store reviews and seller feedback to help customers identify sellers with good track records. Customers, however, should be wary of reviews and comments with feedback from a limited number of users. Employees of companies will often provide biased reviews and opinions of products and services to increase company ratings and product grades. The Internet technology may make it possible for unethical and fraudulent companies to transact business in the short-term. The same technology makes it simple for customers to purchase products and services from other providers if the transaction does not result in expected or better than expected customer satisfaction. Companies must provide a strong basis of trust and deliver what is expected by customers to establish long-term reputation in e-business.

Identity Theft in E-Business

Identity theft occurs when someone uses an individual’s personal information for personal gain without his or her permission. “Identity theft is recognized as the world’s most menacing and fastest growing fraud” (Sarathy and Robertson, 2003). The Internet technology and e-business increase the ability of a criminal to commit identity theft on two fronts. First, the Internet technology increases the ability of an individual to gather personal information. Second, e-business allows a criminal who has obtained personal information like a credit card number to transact over the Internet without verification of signature or picture ID. For example, the increased resolution on cell phone cameras increases the ability of criminals to photograph or film credit card and personal information. To protect against identity theft, individuals should be aware of potential threats and survey the environment anytime personal information is displayed.

The Internet can be used to gather personal information with the intent of committing identity theft in a wide range of methods. The most popular methods of obtaining personal information over the Internet for use in identity theft are done by e-mail or spyware. Individual seeking personal information for use in

identity theft will often send out mass e-mails with a manipulated sender address and a message that appear to originate from an authentic source. A recent scam circulating in many e-mail inboxes was an e-mail that appeared to come from Citibank and well-known companies. The e-mail stated concern with identity theft and mandated customers to update account information and PIN to protect against possible theft attempts. The e-mail then provided a link in the e-mail that would redirect the user to a dummy site identical to the banks.

Spyware enables an individual or company to monitor and gather information on the activity of a computer user. Many Internet users unknowingly download spyware to their computers when opening e-mail attachments or downloading files from the Web site. Spyware downloaded from a bad source can be used to obtain social security numbers, personal files, account numbers, pin numbers, etc.

To avoid and limit the negative impacts of identity theft, individuals should follow sound security practices. These include keeping private information in a safe location, shredding documents that contain personal information, maintaining an up-to-date virus and spyware scanner, utilizing a firewall, identifying potential threats, and maintaining awareness of surroundings.

Privacy in E-Business

Companies electronically collect customer data to mine the customer information to re-define the market and try to obtain a competitive advantage. Customer data may include recent purchases, gender, age, income, address, credit card number, social security number, credit history, and Internet web viewing history. Companies gather customer information by storing customer input of personal information, tracking user Internet history through the use of web enabled cookies and sometimes spyware. They also acquire customer information through credit reports, background checks, and databases from other companies (Magid, Tatikonda & Cochran, 2009; Sipior, Ward & Rongione, 2004).

Customers are growing increasingly concerned with the amount of personal information being sold in the market place. An individual that provides an e-mail address to one website more often will most likely receive increased spam from multiple companies. Personal details that should be kept private are often not protected and even intentionally used contrary to the company's privacy policy. If a company is to succeed in the long-term, it must verbalize and demonstrate practices that maintain customer privacy.

Individuals aware of techniques used to gather personal data can reduce the amount of personal information exposed on the web. Before providing personal information to a company, individual should read the company's privacy policy to make sure private information will not be used inappropriately (Ashworth & Free, 2006). When an e-mail address needs to be provided, individuals should use a secondary e-mail address. Web browsers can be set to disable the use of cookies. Unfortunately, many websites are not fully functional without the use of cookies. To help individuals maintain privacy and full functionality of the web, companies have developed software that provide tools to browse anonymously, manage cookies and manage e-mail (Goldman, 2003).

Policy and E-Business

Governments and corporations are responding to security and privacy concerns of e-business by mandating new policies and regulations. In creating new policies, the policy makers must identify a balance between "individual privacy" vs. "societal good" and "individual privacy" vs. "commercial interests" (Sarathy & Robertson, 2003). To encourage company self-regulation and avoid unnecessary government regulation, many industry trade organizations have self-imposed regulations on how web sites collect information and how the information is used. Among these industry trade organizations include the Better Business Bureau, The Online Privacy Alliance, The Direct Marketing Association, The World Wide Web Consortium, and The Entertainment Software Rating Board. These organizations

require companies to implement their regulations and monitor compliance (Sipior, Ward and Rongione, 2004).

Governments across the world are taking different approaches to regulate the negative implications of e-business and Internet technologies. The policy created by different nations is greatly affected by culture and history of the respective nation. Nations with a cultural focus on individuals versus the collective people will be more likely to develop tighter legal policy of e-business. The United States is trying to allow industries to self-regulate as much as possible. The US federal government has been piece-meal and industry specific in creating legislations. Disparities between different country, industry, and company regulations have created a wide discrepancy in standards (Sarathy and Robertson, 2004).

CONCLUSION

The Internet and internet technologies have helped large businesses for the past 15 years. Because of their size, they were able to gain a considerable competitive advantage over both large businesses who did not have the foresight to realize the advantage to be gained, and smaller companies which could not afford the technology or highly skilled professionals who understood how to use the technology for the company good. In addition to the initial investment, the day to day costs of using these systems was too high for small and medium sized businesses to take advantage of these new technologies.

Since 2005, things have changed dramatically. There have been significant advances in both the capability of these newer technologies, and the costs have come down so that even very small businesses can afford them. Vendors have come up with scaled down versions of ERP systems which give SME's the same advantages that large businesses have gained, but with limited capabilities. Open source products have allowed smaller businesses to customize existing products to meet their specific needs. The Internet, the backbone of the technology usage, has become more available at increasing speeds at lower costs for all businesses and their customers. Virtually every business from large multinationals to small mom and pop stores now have a web presence. Web service providers offer "packages" with different functionality so that every business can at least have a web page and collect inventory information for a very low cost.

There is no need to be technically literate in the lingo of the Web, as all of this work can be done by specialty shops at a very low cost. The dot com revolution may have come and gone, but Moore's Law continues to hold. Capabilities are doubling every 18 months, costs are halving every 12-18 months, and "size" vs. specific capabilities is becoming the major difference between businesses of all sizes. SMEs should grab the opportunities to tap into the low cost E-business applications to enhance their shipping, advertising, supply chain and EDI business operations while pay attention to common E-business concerns such as ID theft and privacy. The new technologies of today, including RFID chips, will become the old technologies of tomorrow, and nobody knows what the next big innovation will be which may trickle down from large to smaller businesses. Those who do not join in, like their larger counterparts, are very likely to disappear in the very near future.

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