The digital economy

Economics

In recent years there has been a greater interest in a " digital economy". This new economy is surviving and doing well, despite the fact that there has been a decrease in IT investing in the last two years. Even with the decrease, IT is still going strong. This decrease, which occurred only recently, followed on the heels of a huge boon in IT activity and investment during the 1990's (Price, 2002). The idea of a digital economy is not new. It has been dreamed about for years. The problem was thattechnologyhad not advanced far enough to make the digital economy a reality yet.

Now that it has, the IT sector is moving forward in an effect to change the economy of the entire world into a digital economy filled with technology and e-commerce, which will offer great convenience and also great speed when doing business on virtually any level from the simple consumer purchase to the large, multi-billion dollar corporate deal. There are several important characteristics of a digital economy. First, the physical movement of people, things, money, etc. , will not be needed. Everything that needs to be done will be done electronically.

There will also be an urgent, rapidglobalizationof economic activity (Ministry, 1997). In other words, the way that business is done will change completely. Some of that is already being experienced in the way that many people now shop online for items and have them delivered directly to the intended recipients, instead of waiting around in long lines in crowded stores, only to find out that the store is out of whatever it is the person wanted anyway. Digital economy will stop all of that, and it will do much more.

That is just a small and simple example. There are, of course, much larger ramifications for businesses that deal with a great deal of money, time, and manpower all over the world every day. Second, contracts and other means of securing and sealing business deals will all be done electronically (Ministry, 1997). There is a concern about this, however, because many people are not comfortable today with even doing simple things like giving their credit card number to an online company to pay for a purchase.

Clearly, many advanced safety and security measures will be required before all businesses will feel comfortable receiving a contract or proposal that is electronic instead of in writing. Third, the basis of the digital economy, IT, will continue to grow and expand very rapidly. This will result in many changes in economic activities. Economic rules will need to be created and updated at a very rapid pace so as to keep up with competitors and not get left behind in the information age (Ministry, 1997).

People who make the rules and regulations for electronic commerce and IT will have their work cut out for them in this new digital economy. There will be a need for many more rules than the traditional economy has, because of the delicacy of electronic transmissions and the potential for 'hackers' to get into a computer system and get a hold of sensitive information such as credit card numbers, bank account numbers, and social security information, among other things. Fourth, and finally, the digital economy will make its way to everyone (Ministry, 1997).

Even people who do not own a computer now will find themselves caught and pulled into this changing economy. Some people will resist this change

because they are concerned about security, or simply because they do not like the way the world and the idea of commerce is changing. Especially people who have been around since the days of walking down to the corner store to get some penny candy. While it may be difficult to convince everyone, especially the older generation, that e-commerce and the digital economy are good things, it must be done because the digital economy is coming.

The digital economy came about slowly, as people looked for new and better ways to do things. As IT expanded, it brought with it change, and a renewed interest in what human beings could accomplish if they simply put themselves to the task at hand. Because human beings decided to find out, technology began to grow at a very rapid rate. Now, it is not that technology is changing so fast, it is just that many different components of it are changing all at once (Harris, 2002).

As for the power behind the changes, much of that has come from entrepreneurs and other businesspeople that want to see things work better, faster, and smoother. They are also interested in the most possible profit they can get, which causes them to be interested in any kind of cost-effective technology that can help them reach that goal. The more work that entrepreneurs were willing to do to help themselves, the more they also urged technology forward (Harris, 2002). While the IT sector is not officially in control of the global economy yet, it soon will be (Brotman, 2001).

Technology is advancing so rapidly that there is no reason to expect it to suddenly stop, or stranger yet, disappear. Because technology has come so

far, businesses must go along with it. They will be left behind if they do not take an interest in technology and the digital economy now. Technology and e-commerce are fast becoming the way that people do business. This trend will only continue and will be very difficult to ignore in the next few years. Without taking action now, businesses will be struggling when all of their competitors have the digital and economic advantage.

The outlook is very good for the digital economy. The main reason that this new form of business will do so well is because it is based on a form of business that works and has been around for a long time (Sahlman, 1999). While some people, especially in the United States government, are panicky and concerned about an economic crash, many people are coming to the realization that not only is the digital economy on a sound footing, but it is also going to be here. It is around to stay, and the concerns of the government are not going to make it go away (Sahlman, 1999).

The digital economy will work because it has fewer barriers to trading and dealing with other countries than the traditional business methods. It will work because it is built on a solid foundation of good business ideas and planning. Most of all, it will work because people want it to. They believe in it and they will see that the digital economy goes forward, no matter what the cost. The digital economy has not quite made it around the globe yet, nor has it accomplished everything it wants to accomplish, but it is still in its infancy.

When it finally makes it around the globe and insinuates itself into every transaction that is made, however small that transaction may be, every

business transaction will be faster, easier, safer, and more convenient than ever before. That is something that many businesspeople all around the world are looking forward to. So are consumers. No more lines, no more hassles; just the ability to get business done and have the time to go on to something else. All of this has come about because of information systems and computing.

Information systems and computing have become more widespread in many organizations throughout the last 15 years and the amount of this has deepened and infiltrated almost every level of organizations (Adams & Sasse, 1999). Some of this has to do with the fact that personal computers have become more powerful and increasingly less expensive (Adams & Sasse, 1999). This has created the ability to have computing power and management information systems tested and placed into the hands of many more individuals throughout various organizations, and this includes the government (Adams & Sasse, 1999).

How computers are used and the nature of what they are needed for has also changed recently because computers have come into many more homes (Adams & Sasse, 1999). Much of this comes from extending computers from the workplace into home life (Adams & Sasse, 1999). Some of it also comes from laptop computers and how they have become so important for individuals that travel and need to take their work with them so that they will be able to check e-mail and exchange messages no matter where they are (Adams & Sasse, 1999).

Because of all the changes in the nature of computing their use has continued to speed up and spread out to more and more individuals (Adams & Sasse, 1999). Many of these are linked to various organizations or they have specific networks that they are linked into which allows them to do more things. The Internet has also become extremely important because people all over the world can work with each other through a computer and this avoids many of the long distance phone calls, business trips, and other issues that would normally have to be dealt with when dealing with a client or customer overseas (Adams & Sasse, 1999).

Much of the use of computers within the public sector and the government is growing very strongly. One study that was conducted regarding state governments indicated that, in general, all states on average were spending over 3 percent of the budget that they had for their executive branch on the management of information resources and computer use (Adams & Sasse, 1999). For all of the 50 states in this country this would come to a combined total of $19. billion (Adams & Sasse, 1999).

This particular study was taken in 1989 and estimates indicated that by 1993 the number would be $52. 6 billion (Adams & Sasse, 1999). This would be much higher today. That same study also examined the type of computer use that was dealt with in county governments because their budgets are often smaller than states. An estimate taken in 1992 indicated that county governments throughout the United States were spending approximately $23. 8 billion on management information systems which amounted to over 17 percent of the operating budgets that they had (Adams & Sasse, 1999).

Business strategy and IT strategy are often very closely interlinked, especially in today's global and technologically advanced society. However, the selection of information systems is not always appropriate for the business at hand, and when the strategy and information systems do not mix, it can be disastrous. One business involved itself in the business-to-business (B2B) context.

B2B is where marketplaces are created so that sellers and buyers can come together more easily, which helps to improve efficiency, liquidity, and other factors (Putting, 2002). The B2B exchange generally did not do well after a very short time of prosperity, and many people believed that the whole concept was flawed, but it appears that the way the concept was executed and not the concept itself was where the problem actually was. In other words, it was not the idea of a B2B exchange, but rather the strategy that the companies used, that caused the problems for many of these companies.

The strategy of the B2B idea was the main problem with the concept. The problem largely revolved around the issue that both suppliers and buyers were needed, but the suppliers would not congregate if there were no buyers and the buyers were not interested if there were no suppliers (Putting, 2002). In other words, both groups had to be present but which group would get there first and how to get both groups there together so that everyone would be interested because a large problem.

This problem was one of strategy, as the concept of B2B was strong but it was not well planned-out. In hind-sight, the B2B concept would have worked much better if companies had understood it better before they agreed to it.

They did not really understand the concept clearly, and this is part of the reason that there was so much trouble getting both suppliers and buyers to come together at the same time so that they would be able to do business which each other more easily.

There were also other reasons that the concept did not do well, and these included the idea that suppliers feared the direct comparison that they felt they would be subjected to and would cut into their margins, as well as the lack of interest between buyers and sellers both in paying any kind of transaction fees for what they felt was a very simple and inexpensive process of matchmaking (Putting, 2002).

Another problem with the strategy, and the way that it ties into the IT issue, is that the buyers and sellers market that the B2B concept was attempting to create was begun before the computing and software abilities were in place to allow such a thing (Putting, 2002). It is quite likely in the future, however, that software will be created that will allow for the B2B concept to work the way that it was designed to work. This does not mean, though, that the B2B concept is one that will be revived, simply because the technology is there.

It may be something that has already had its time and will not be coming back, regardless of what kind of effort is made to revive it. However, the B2B concept has now gone in a different direction and it may be headed in the right direction finally. Instead of working toward exchanging things, the B2B companies now are more interested in software and various solutions that can help others with e-business efficiencies and business processes (Putting, 2002).

By doing this, the B2B companies will be able to build their businesses by getting one customer at a time instead of trying to build all of the marketplace that does not have any customers (Putting, 2002). In a related area, an industrial group that consisted of manufacturers of tools that are designed for the automobile industry collaborated to create a computingenvironmentbut they were ahead of their time by as much as two years (Worthen, 2001).

Because of that, there was no real way to integrate the systems that they created and many of the employees were afraid that there would be layoffs because the money that was spent - 4 million dollars - would not be allocated for something else and was basically wasted when the integration did not take place as planned (Worthen, 2001). This is another case of taking the IT strategy and the business strategy as separate entities, when they really should have been dealt with together to avoid the problems that the group of manufacturers faced.

Although the message is getting across to other companies about what these manufacturers can do and provide, there are still problems with any kind of integration, and this is costing these companies both money and reputation, both of which could be very harmful if too much of them is lost. In both of these cases just discussed, there were problems with the strategy formulation and implementation, as well as the strategic process itself. In other words, there were strategic challenges that were not examined and thoroughly accounted for before the implementation was begun.

By far the largest strategic challenge that is facing marketers today is that of globalization (Shaw, 1999). In the next 10 years the global marketplace will continue to grow and as it does marketers must work harder and smarter to come up with new ways to keep their marketing and advertising campaign appealing to the largest number of people possible (Shaw, 1999). This can be somewhat difficult, because globalization means the drawing together of many different cultures and beliefs, which represents a strong and worthy challenge for those that market a product, business, or service to various countries.

In a B2B context, these people from all over the world must be able to work together, and this can be very difficult when cultural, language, and other barriers get in the way, and when the strategy has not been carefully planned out. Possibly the most significant issue when it comes to strategy is that of standardization - the product or service must be standardized enough that it will work well for all customers - which is something that many of these companies do not consider before they implement B2B ideas that relate strongly to IT.

One of the main problems with looking at this is the evidence that many business managers do not clearly understand what standardization is and therefore the responses that they give when indicating to marketers what they actually want may represent a strong desire to protect their self interests (Onkvisit & Shaw, 1994). When they do this, marketers must be careful to make a determination as to whether these business managers really want to market in the way that they are indicating or whether there

are other factors that the managers must be made to understand before successful marketing campaigns can take place (Onkvisit & Shaw, 1994).

Studies that have been done into this issue also failed to address whether there were specific approaches to marketing and advertising products that are seen to be more effective (Shaw, 1999). There are lessons to be learned from this, however, besides the obvious need for standardization. Other lessons include the fact that marketing something new can be very difficult and the companies that wish to work in a B2B context must expect that they will have a difficult time convincing others of the worth of what they are doing.

Also significant is the idea that IT cannot always keep up with what these companies want to do, and the business strategy must tie into the IT strategy. If the two are not compatible, there will be a great deal of trouble and a lot of money lost, which many businesses certainly cannot afford. All of this is causing a great deal of organizational change in many businesses. Organizational change is necessary and important and various aspects of change management must be dealt with by these businesses. These include the resistance to change from management and employees, as well as how to facilitate and implement the process of change.

Evaluating effectiveness is also important. Change is a reaction to the environment in which one must compete. Because technology is evolving so fast this environment has become fluid and some have difficulty adapting to it. However, today's business environment demands it. Change also presents challenges, and organizations must use these as a platform to build on and

learn to welcome the changes that are taking place. Much of this change comes from external forces such as technology, economics, or regulations and laws that have been changed.

This is quite often in the form of computers. However, the fact that laws and regulations change so quickly also has significant impact on organizations. Another area of change is from internal forces and these often deal with problems with processes or behaviors. The design of organizations must continue to change to adjust to new technology and consumer demands and this can have a significant impact on the decisions made by human resources. Organizational change deals with things that encompass the entire organization rather than a specific individual or department.

Making employees aware of the necessary changes in advance of them occurring can make the transition easier and make individuals more flexible about changing. Sometimes individuals can bring different perspectives to the situation and these change agents can often help to create more of a catalyst for change in an organization. Training employees becomes high priority for organizations that are undergoing change and utilizing teams for this so that the timing and scope are right can become one of the most significant things that companies can do to ensure that change takes place properly and with the least amount of difficulty.

Information systems can be quite helpful for this, but only if they are correctly utilized. There are many different ways to look at telecommuting. Depending on the country one comes from, there are conflicting opinions on exactly what the word means, and the same is true of 'telework,' which has

also been used to mean roughly the same thing as telecommuting. Some people define telecommuting as an arrangement that allows employees to carry out their work at a location away from the conventional office, either in the employee's home, satellite offices, or neighborhood work centers (Qvortrup, 1998).

Still others define teleworking as a way of working using information andcommunicationtechnologies in which work is carried out independent of location (Harris, 1998). There are four main ways in which people can telework. Firstly the employees can work from home, liaising with the office by using phone, email, or fax (Nilles, 1996). The second way could be when the employees split the time between home and office (Nilles, 1996).

Thirdly there are certain types of employees, for example sales people, journalists, etc. who carry out their work while they are on the move (Nilles, 1996). Fourthly, there is an arrangement called the tele-cottage, which provides neighborhood centers with shared computers and communications resources for the office workers (Nilles, 1996). Teleworking can also be defined as performing job related work at a site away from the office, then electronically transferring the results to the office or another location (Nilles, 1996).

During the 1970s and 1980s, telework in Europe was often termed as 'Electronic Homework' and was either based on full time contract or on a freelance relationship with the employer (Nilles, 1996). It has been suggested that an adequate definition of teleworking should include three variables: the location of work, the use of electronic equipment, and the

existence of a communications link to the employer or contractor (Nilles, 1996). It is work which relies primarily or to a large extent on the use of electronic equipment, the results of which work are communicated remotely to the employer or contractor.

The remote communications link need not be a direct telecommunications link but could include the use of mail or courier services (Nilles, 1996). The word 'Teleworking' together with various pseudonyms such as telecommuting, networking, flexi place or the electronic cottage, has been used to describe various types of work. The term teleworking has also been divided into three sub-categories in order to specify the many different modes of telework which can be found today (Nilles, 1996).

The three sub categories included Electronic Homework, Telecommuting, and Flexi Place (Nilles, 1996). This can be defined as working at home and delivering the work directly to an external customer using some form of telecommunication. Telecommuting is working away from the work place. (i. e from home or on travel, and communicating with the employer with the assistance of computers and some mode of telecommunication) (Nilles, 1996). The Internet these days is a common mode of communication used for this purpose.

Flexi place involves no defined location of work. A person on flexi place uses his computer and telecommunication device while working on the move (Nilles, 1996). This often involves the Internet, and this can be dangerous, as many people are not aware of cyber ethics, or the ethical issues that pertain to Internet usage. It is very important that adults and children alike utilize

information that deals with cyber ethics so that they are more aware of how to handle problems that may arise (Friedman & Nissenbaum, 1996).

Many of these people are not aware of how to use the Internet ethically and responsibly and because of this they often do things that are detrimental to themselves or others without actually realizing it (Friedman & Nissenbaum, 1996). Within the last decade or so there have been numerous incidence of hacking that have involved young individuals and have received strong public attention (Friedman & Nissenbaum, 1996). EBay, Yahoo, CNN, and other various sites were attacked not all that long ago and viruses have apparently run rampant on the Internet in recent months and years.

They are very strong reminders of the great deal of damage that young individuals can cause when they decide to ignore cyber ethics and see how much fun they can have instead. According to recent information it appears that computer hackers and viruses cost businesses globally over $1. 5 trillion during the year 2000. All signs point toward a problem that is continuing to grow because young individuals do not view hacking as something that is actually dangerous (Friedman & Nissenbaum, 1996).

Unless there is a very strong shift in the way these young people are looking at this issue the problem will only continue and will likely get worse. A poll taken of almost 50, 000 students in middle and elementary schools revealed that almost 50 percent of them did not see computer hacking as any type of a crime (Friedman & Nissenbaum, 1996). Citizenship is very important not just in the world but on the Internet as well and it seems that adults have

really got to begin to take moreresponsibilityfor teaching children about cyber ethics (Elgesen, 1996).

Information technology is somewhat wild at the moment because it is still relatively new and taming it down with responsible and ethical use and guidelines must be done. The best way to do this is by teaching a curriculum of cyber ethics that will began in either preschool or kindergarten and will continue with the students all the way up through their schooling (Elgesen, 1996). This will show not only how to use the technology appropriately but how to look for content and what all should be done to ensure that people are utilizing the Internet logically and safely.

Various professional development courses that deal with educators and campaigns that are designed for awareness in communities are also needed in order to help educate many adults about the responsibilities they have when they use computers (Elgesen, 1996). Quite often adults reward or glamorize young hackers even if they do not really realize that this is what they are doing (Elgesen, 1996). The technical abilities that these children have are very impressive but the behaviors that they utilize them for are completely inappropriate for society (Elgesen, 1996).

It is very important to begin teaching decision-making skills that are ethical to young individuals with their first exposure to technology. This is largely one of the ways that unethical behaviors and technology crimes can be avoided or at least may be minimalized (Gorniak-Kockowska, 1996). If individuals wait until students reach the workplace to try to teach them proper cyber ethics it will be way too late because ethics and morality is

often developed in young individuals by the time they are 10 to 12 years of age (Gorniak-Kockowska, 1996).

Technology is very important to help individuals work toward a better world but if cyber ethics are not addressed very soon it is quite likely that technology will then not flourish the way that it was designed to but instead will be fraught with problems and complications that will only make things more difficult. Although teaching cyber ethics is very important, most individuals surveyed recently indicate that parents should be the ones to teach children about copyrighted material instead of allowing it to happen in school (Introna, 1997).

These same parents should also teach their children about the rest of cyber ethics and how important they are. Because children use computers so much at schools and because they also have Internet access through these schools it is becoming increasingly more important that teachers and parents both take a very active role in teaching not only safe computer use but cyber ethics as well, so that this lesson is learned well before these children grow up and enter the business world (Introna, 1997).

Surveys taken of many adults still confirm that most of these individuals believe it acceptable to download copies of works that are copyrighted even if they are not authorized to do so (Introna, 1997). Intellectual property on the Internet should be respected as well (Introna, 1997). By emphasizing this to the nation's young individuals and to their parents perhaps morerespectwill be gained at home and also in schools, making it easier for the workplaces around the country (Introna, 1997).

Teachers and parents should begin to work together to ensure that young people throughout the country are only using computers and the Internet for good intentions and are respecting what they find online instead of downloading unauthorized copies (Introna, 1997). The issue of cyber ethics is changing very rapidly because technology is growing and changing as well. One of the problems with it is that the definition of it can be very broad or very narrow and this often makes it difficult for individuals to actually determine what cyber ethics means and what it means for them specifically.

In other words, some of them see it as not utilizing the computer to hurt anyone else but others see it as being much more than that by ensuring that copyrighted material and other issues are kept protected (Introna, 1997). When computers first were created there was nothing known as computer ethics because the Internet and other things which could cause individuals to find a great deal of copyrighted material and other intellectual property online was not available (Introna, 1997).

Computers were seen as a tool, and not seen as something that could be utilized to harm others or cause problems for various individuals throughout the country or throughout the world. However, it did not take society long to realize that harm could come to people and their property over the Internet. Efforts have been made to stop this kind of behavior and protect copyrighted material, but the effectiveness of these measures is questionable.