IMPACT OF OFFSHORING IN COMPUTER SCIENCE

A thesis submitted to Kent State University in partial fulfillment of the requirements for the degree of Master of Science

by

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December 2006
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ACKNOWLEDGEMENTS

I sincerely thank my advisor, Dr. Austin Melton for his guidance and advice and for keeping me focused in my research. I also thank Dr. Michael Byron for his contributions and insight in my work.

I also thank my family for their love and support without which I wouldn’t have reached this stage in my career.

Finally I thank Dr. Cheng Chang Lu and Dr. Javed Khan for agreeing to be on my thesis committee despite their busy schedule.
1. Introduction

1.1 – History of Offshoring

Offshoring is a term that has become prominent in today’s business and economic world. It has become conspicuous in all facets of business where the goal is profitability which gave way to globalization. Though the word profit invokes positive feeling to the business world, offshoring has created both negative and some positive feelings in society as a whole. This chapter focuses on the history of offshoring.

Offshoring is said to have emerged a few thousand years ago with the production and sales of food, tools and other household appliances. As soon as small communities and societies began to form, there were needs for goods and services and people with specialized professions began to trade with each other to meet their needs. In effect it can be said that each worker was offshoring some activities to others because it was easier and beneficial for them both in terms of profitability and convenience.

The import of raw goods and agricultural products from less developed nations and the export of manufactured goods by industrialized nations go back centuries to a time when transportation across long distances became feasible. Back in the early years of US History, the making of America's covered wagon covers and clipper ships' sails was a job outsourced to workers in Scotland, with raw material imported from India. England's textile industry became so efficient in the 1830s that eventually Indian manufacturers couldn't compete, and that work was outsourced to England.
Overtime, some countries paced tariffs and other protective barriers on international trade to protect their markets or industries. This limited the growth or movement of Globalization which is defined as “The tendency of investment funds and businesses to move beyond domestic and national markets to other markets around the globe, thereby increasing the interconnectedness of different markets.” The first period of intensive globalization came in the nineteenth century when laissez faire economic theory drove nations to reduce or remove tariffs that limited the movement of goods. It was also driven by the adoption of the gold standard by many countries in the second half of the nineteenth century. It led to the concentration of industrialization in the industrialized countries at the expense of their agricultural bases, specialization in the manufactured products they exported, growth in population and demand for greater import of agricultural products from agriculturally oriented countries. Globalization led to a substantial increase in wealth for the industrialized countries.

This period of globalization ended with the onset of the First World War and then an era of protectionism ensued between the two world wars. The second wave of globalization which continues today began near the end of the Second World War that led to the formation of The World Bank, The International Monetary Fund and the reestablishment of the gold standard. The World Bank was formed with the intention of providing financial reconstruction to nations destroyed by the war and to reduce poverty through the funding of state governments to improve their educational, agricultural and
industrial systems. This was followed by a series of international agreements to protect free trade which enabled more countries to engage in free trade.

The automobile industry is a witness to the early forms of offshoring where machines replaced labor. Ford Motor Company relied heavily on workers in the past to assemble car parts. These workers were replaced by machines because they are cheaper in the long run, produce better quality products, or a combination of the two. The objective was to increase the quality which was defined by the consumer and to keep the costs low which were inferred from the revenue. Although workers’ jobs were lost from this replacement of workers with machines, the companies made more money by lowering costs (and increasing quality, thereby increasing revenue). The motivation of a firm to replace its workers for higher profit is a pattern similar to offshoring. Some argue that higher profits lead to further job creation, allowing those who lost jobs to gain jobs in other sectors of the economy.

A similar story occurred in the technology industry. The United States has dominated the computer industry throughout its history. In its hey-day IBM alone held 70% of the world market for mainframe computers. Beginning in the early 1970’s American semiconductor companies began to move labor-intensive chip assemble to low wage countries in East Asia. During this period major US electronics products firms began to set up affiliates in Hong Kong, Singapore and Scotland to use high quality workers (with wages lower then US workers) to do labor-intensive assembly such as assembling circuit boards or assembling price-sensitive products such as computer
peripherals or telephones. At first the components were built in the United States and shipped to these assembly plants but over time the assemblers began purchasing components from local services. These chipped were then shipped back to the American or European electronics firms for assembly into final products. Eventually their skill levels increased and they began to provide turnkey services. In the 1980’s the East Asia began to take in additional manufacturing work and finally had the capacity to provide circuit boards and electronics products to the entire world.

As more and more of this manufacturing work was done in other countries, middle class jobs were lost in the United States but on the bright side the combination of technological innovation and the increase of global sourcing and markets for hardware led to price declines which led to greater investment in IT in the United States. This in turn caused an increase in the development of new products either incorporating IT or using IT in its development or manufacture.

The software industry also had its own story of offshoring. In 1970s, it was common for computer companies to export their payrolls to outside service providers for processing. This continued into the 1980s, where accounting services, payroll, billing, and word processing all became outsourced work. But most of this work was outsourced to service providers only as far away as another state, not overseas, and the reasons for offshoring had more to do with small efficiencies than reshaping the economy. It wasn't until the 1990s that offshoring began to emerge as a potentially powerful force in transforming global economies. India, Singapore, Ireland, Israel and Hungary were all
early entrants in the offshoring business. It was driven by labor shortages in the United States especially associated with fixing the Y2K problem and creating new Internet products and services during the dot-com boom.

When the dot-com bubble burst, offshoring continued with cost as a major driver. The practice of offshoring became a political issue in the United States only after the recovery from the 2001 recession was historically weak in the creation of jobs.

So what is different between the early forms of offshoring and the current form of offshoring? We believe that early forms of offshoring affected only a specific industry where as the present day offshoring potentially affects almost all industries and businesses. This is primarily because application of Information Technology has made businesses easier, more manageable and profitable than without IT.

Since our economy has been through what is called loss of jobs for gain of profits, one wouldn’t think much about IT offshoring. If we study the earlier forms of offshoring, we would see a pattern where the jobs lost brought in gains that benefited the economy. Let’s take the semiconductor and hardware industry as an example. Offshoring later gave way to decline in the prices of the goods. Such patterns would tell one not to worry much about what the economy is currently going through. There have been assumptions that loss of jobs will bring in more money and create more jobs which will benefit the economy and also in future the jobs will come back to the US when the salaries of workers in low wage countries reach that of the US standards.
We believe that the current offshoring is different from the previous forms because the effects whether positive or negative are spread on a global scale and through more types of businesses and industries. The assumptions stated above may or may not happen and that depends on what we do with the present. The motivation of this thesis is to bring to everybody’s attention that IT offshoring is not to be treated as any other form of offshoring and that it will bring about major changes in the global technological and economical balance. As the title of the book “The world is flat” by Thomas Friedman which talks about offshoring says, IT offshoring will make the world flat.

Any change brings about major changes to an existing system - some of them good and some bad. In this thesis we discuss why IT offshoring is different and why the future will not be the same when compared with other forms of offshoring. I want the readers to know that when I began this study, I believed that there were more cons than pros. Though I now better understand the benefits of offshoring, I still believe that a company should consider carefully the pros and cons of offshoring before resorting to it. We have presented our discussion in three chapters.

Chapter 2: We don’t say that offshoring is a negative practice. It has some benefits too. We discuss the advantages and disadvantages of offshoring.
Chapter 3: We talk about the various issues involved in offshoring from a social and ethical perspective. We offer guidelines that provide a win-win solution for the countries involved in offshoring.

Chapter 4: We present the future of offshoring from our perspective and why IT offshoring is different.
2. Offshoring – Behind the Scenes

The term outsourcing is often used interchangeably and incorrectly with offshoring.

- **Outsourcing** is the farming out of services to a third party that specializes in that service.

- **Offshoring** which is a subset of outsourcing is when a company outsources services to a third party in a different country.

In this thesis we will refer to the country from which work is sent as “client country” and the country to which it is sent as “offshore country”.

Countries that send software and IT-enabled work offshore are primarily high wage countries with advanced technology and service industries. The concept of offshoring was fuelled by the idea of making more profits and the lower cost of qualified labor in the offshore countries helped to convert the idea to reality. In some cases there were additional reasons that supported the idea and in others the idea of offshoring opened up other advantages. We list the primary advantages of offshoring.

- **Reduced wages and Increased Profits**: Profit is the keyword. A work which is currently costing $100 an hour in Boston can be done for $20 an hour in Bangalore or Beijing. In this way companies can continue with their operations and also increase their profits.
• **Larger talent pool:** With offshoring, companies can tap into a larger talent pool especially during times when the demand is more than the supply. In the late 1990’s many US firms turned to Indian vendors because they had programmers who had the expertise to fix the Y2K problem. Similarly during the dotcom boom many US firms turned to offshore vendors to find enough people who knew the Java programming language.

• **Area of Expertise:** Companies sometime offshore work to countries that have greater experience in a particular field than they do. This experience can be of four types:

  Experience with a particular technology: Asian countries are highly skilled with hardware and digital technologies like mobile phones and wireless accessories.

  Experience with a particular scientific domain: There are several countries with high expertise in fields related to biomedical discipline.

  Experience with management, cultural or marketing issues: For example some countries have experience managing projects that operate multiple shifts per day.

• **Time Shifting:** Offshoring enables the providing of around-the-clock services. For example, US hospitals are using US-trained Indian physicians to read X-rays in India in time to deliver the results to the US doctors the next working day. Some companies have several offshore sites, located strategically by time zone, that enable them to provide round the clock services such as help desks and support jobs.
• **Reduced development time:** Offshoring helps to minimize the time required to develop a product. This is also made possible by the time shifting factor. When an employee in the US finished working on a design by the end of the day, an employee in China can either continue the design or check the code and provide updates. Work can also be divided into modules and each module can be developed simultaneously and finally combined into one product thereby reducing time if each module were to be done one by one.

• **Market Presence:** Companies find it strategically attractive to have a market presence in countries in which they would like to sell their products. It would also improve awareness amongst customers in those countries.

• **Flexibility:** Sometimes companies especially those from a non IT background, either have periods with a lot of work or with less work. In such situations offshoring works out well in terms of profitability and flexibility. These companies can benefit by sending work to offshore providers who can supply very capable professionals with the right domain expertise at the right cost and at the right time.

• **Business Reasons:** After the dotcom and telecom bursts, many startups, especially in the IT, telecom and biotech areas have found it difficult to raise venture capital. Offshoring helped these companies with lower cost locations and more profit.
In addition to the idea of profitability, offshoring has been made possible by a collection of technological, business, work process, policy, educational and other changes over the past 15 years. We discuss them here.

- **Infrastructure:** The dot-com boom inspired various telecommunication carriers to increase satellite and optical fiber networks to the point where there was a glut in the market after the dot com boom ended and prices plummeted. Telecommunication capacity between India and the United States grew from practically nothing in 1999 in 11,000 GBS in 2001.

- **Advancement in Technology:** A number of changes in information technology also changed the opportunities for offshoring. Software platforms became standardized. IBM and Oracle provided the standard for database management, SAP for supply chain management, PeopleSoft for human resource management. Offshoring workers could invest in the purchase of a small number of standardized software platforms and train their employees in their use rather than having to deal with the possibly hundreds of proprietary software systems. Standardization of data formats and networking protocols also made it easier to move large data sets from client to vendor.

- **Business Strategies:** Since the 1970’s businesses in the United States have been trying to move away activities that were not regarded as core competencies during eras of engineering and downsizing. This pattern was first seen in automobile and
manufacturing and hardware industries. As IT systems became more standardized they were seen less as core activities.

Another reason that propelled the growth of offshoring was competition. Companies are always on the lookout for new ways of creating profits. So when rival firms began offshoring, many companies felt they had to offshore to remain competitive.

- **Changes to work process:** Changes to the work process have enabled offshoring. Certain kinds of work have been digitized and business process reengineered, making them suitable for offshoring. The growth of IT technology and its influence made it possible to do a lot of the work with software and services instead of with manufacturing.

- **Higher Education system:** Some of the developing countries are using higher education as an effective means to create a skilled workforce. There are 160 universities and 500 institutes today in India offering computing degrees of one kind or another. There are also institutions by some offshoring vendors that offer training for people in jobs in IT. So this makes it easier for companies to offshore work. Also visa tightening and attitudes towards the United States in the post-9/11 era has reduced the number of foreign students applying to graduate school in the United States. The dot com burst also saw a decrease in the number of domestic students studying IT.
• **Immigration:** A large number of Indian and Chinese students came to the United States to study and many of them stayed on to work. In the concentrated high tech regions of the United States most notably the Silicon Valley, communities of Indian high tech entrepreneurs emerged and bonded with other Indians. In many cases these technical entrepreneurs were the ones who started offshoring. Also US immigration policy especially the H1-B and L-1 visa programs have enabled Indians and other foreigners to gain valuable experience and contacts in the United States before returning to their home countries. The fact that English is the language of business and education in India has helped make India more attractive to US firms.

Recently the government and companies in China and India have been encouraging and recruiting workers to return permanently to live and work in their native countries. They have been providing salaries, benefits and stock options that make living in India attractive to Indian high tech workers who had been working in the United States. They also help as a bridge between the client country and the offshore country alleviating a lot of cultural and social problems in offshoring.

There are some reasons which can be categorized as disadvantages or reasons why a company would not outsource.

• **Work Process:** This includes jobs which have some complex nature. Some application might involve complex processes that require frequent intervention to fix algorithms or data. Companies may not want to disclose that to the offshore vendor. This can also be high-skill work such as research, process design or business analysis.
For some jobs, it might be difficult to coordinate the work if the employers are geographically distributed. There are jobs which require face-to-face interaction. Though technology has advanced to provide video conferencing, companies might prefer not to offshore them to be on the safer side.

- **Infrastructure:** Offshoring is profitable. But there are some costs involved in getting things started. Sometimes it might involve building the infrastructure that involves telecommunication, transportation etc. Also the smaller companies may be hesitant to make a huge investment.

- **Security:** Though it is generally acknowledged that proper security is required to interact with the Internet, it is uncertain exactly what can be called proper security for a given company. Security is a big issue anywhere there is confidential and sensitive data. Data privacy and security are hard to control at the offshore site. It is difficult to ensure that the vendor will protect the client’s intellectual property. There might also be cases related to infrastructure where giving the vendor’s employees VPN access to the clients information system makes security difficult.

  There are other issues related to security. Sometimes the work requires security clearance or the vendor may not be able to meet the professional qualifications to do certain kinds of work such as being an accountant certified by the client’s country. Also the offshore country may not have any legal recourse to privacy, security or intellectual property problems.
• **Additional Issues:** The client may need to implement new bureaucratic structures such as explicit authority reasons, operating procedures and incentive systems. There is also an additional cost for evaluating vendors, managing contracts and severance pay for laid off workers.

   Cultural issues may exist between the vendor and the client countries such as social behavior, attitudes towards authority and language issues etc.
3. Issues in Offshoring

The current trend of offshoring has been very influential in the economy as a whole primarily due to the influence of IT and IT enabled services in all fields of business. The impact of offshoring on the US society has invoked both positive and negative responses. The positive responses have been strongly supported by the business world while the negative responses have opened up issues which need to be addressed. It’s been identified that client country has had more negative impacts than the offshore country. In this chapter we discuss some of the social/ethical and cultural issues of offshoring from local and global perspectives. We refer to the client country, the country which sends work offshore as local and the offshore country where the work is sent to as global. In general we approach issues from the perspective of workers in the client country. All the facts and figures mentioned in this chapter have been taken from the report by ACM – Globalization and Offshoring of Software.

3.1 Social Issues

The onset of offshoring had a dramatic effect on the economy. The immediate impact of this new business strategy had a major negative effect on the local economy which led to the loss of thousands of jobs especially in the IT industry. The potential advantages of offshoring were formally discovered during the Y2K issue when programmers were brought in from offshore countries like India to meet the supply when the demand was high. The advantages were welcomed by the companies and the pattern
of bringing in workers continued until the dotcom burst. This plummeted IT economy and companies had to resort to offshoring to manage the costs. Since all sectors of business used IT or IT enabled services, offshoring later turned out to be an important strategy for the business world.

From a global perspective, offshoring has been beneficial in terms of economic growth and investment of foreign investment for the offshore country. It has been a blessing in the form of more jobs for the middle class in low wage countries. A McKinsey Global Institute study shows, for every dollar that was previously spent on business processes in the United States and now goes to India, India earns a net benefit of at least 33 cents, in the form of government taxes, wages paid by U.S. companies and revenues earned by Indian vendors of business-process services and their suppliers. Expanding the middle class in developing nations can be an important strategy which provides great benefits in the long run from the prosperity abroad. Apart from some social and cultural impediments which are not related to the discussion of this thesis, the countries that gained the jobs had a phenomenal growth in economy and infrastructure.

3.1.1 Job Market

“Do you want to do business with companies that take away jobs for U.S. citizens by outsourcing work to foreign countries?” asks The Organization for the Rights of American Workers or TORAW. Technology jobs are following a path well-trodden by the manufacturing industry. Technology professionals will face the same kind of wage
drop and the work could go offshore much faster than manufacturing did, according to Matthew Slaughter, Dartmouth College’s associate professor of business administration. “It is easier to ship IT work across phone lines and put consultants on airplanes than it is to ship bulky raw materials across borders and build factories and deal with tariffs and transportation.”

In the beginning only low level jobs were sent out. The idea was that profit made from shipping of these jobs would give way to higher level jobs. On the contrary, now jobs of all levels are being offshored. It’s hard to determine the number of jobs that have been sent out. Since low wage is the primary reason for offshoring, one job in the client country can be equivalent to three other jobs in the offshore country in terms of wage. So it may not be fair to say that one job lost in the client country is another job created in the offshore country. It’s also hard to say how many more jobs will be sent offshore. McKinsey (2005) statistics say that the actual number of jobs offshored is still a small fraction (less than 15%) of the number that could be outsourced. For the companies using IT or IT enabled services, India is the major destination primarily due to its significant amount of educated and English speaking population.
We can expect that, similar to the manufacturing and hardware industry in the early 1980’s, lower labor costs would lead U.S. companies to higher profits, and so better financial health, hence to expansion, creating in turn jobs with higher value-added than those lost. This would result in lower prices for the products of U.S. companies, benefiting their consumers and shareholders. But what’s different is that the phenomenon of offshoring is now prevalent in all business sectors and in all levels of jobs. Moreover IT giants like Microsoft and Intel are now not only looking for cheap labor but also for brighter talent. They have already set up their bases for high level jobs in countries like...
China and India. So from these developments it’s hard to say whether the history of offshoring would repeat with more jobs and better economy in the client country.

Fig. 2

For some people it’s not just about losing a job. To become a software programmer one should have a degree and also depending on the position a few years of practical experience. The higher the position, the more is the investment from an individual. After investing so much time, money and effort for a career path they find that their jobs have been sent to countries where labor is available for a lower wage. “They took my job; they took my livelihood” says Mike Emmons who lost his programming job when his entire IT department at Siemens Information Communication Networks was

outsourced to an Indian company. Even if the jobs lost are low level jobs, if a greater share of jobs in the United States becomes exposed to foreign competition, this could place steady downward pressure on wages of U.S. workers. For an individual this might have personal and professional repercussions which can mean a complete career shift and a low morale. From the perspective of a society or a community this can cause drastic effects such as depression and violence.

Guideline:

Capitalism is an economic system in which businesses are owned and operated privately with the goal of maximum profit. But it is also a part of a society. When you are in a society there is always constraint within which you operate like societal values, environmental laws, federal and state laws etc. When a company operates within these constraints, there is interdependency. For example, if a company operates within the environmental laws, it keeps the environment free from disease producing factors. In a similar way companies are connected to their employees and the people of their country and operating within the constraints is beneficial. We do understand that since competition also means profit, one might neglect the interdependency. So the real question to be addressed here is how this interdependency can be used to create more profit. Given the current situation, how can we increase our profitability and also operate harmoniously within the constraints. Can the following ideas be considered?

- Get rid of the wastes: Most of the companies do have a lot of processes which can be eliminated or made efficient. This also might involve people though not on
large scale like the effect of sending an entire department offshore. From a positive view this will encourage the employees to work better or to develop more skills and ensure a competitive atmosphere.

- Use technology to help technology: Use technology to develop better technology that will save money. A simple example can be applied to the manufacturing industry where better technology created goods with better quality and speed.

- Value vs. Price: Try to compete with value rather than with price. Are these companies really resorting to offshoring because they can’t survive in the market or just to enjoy the taste of making more profit? In many cases it’s just about money as the movie “High Cost of Low Prices” depicts about communities struggling to survive in a Wal-mart world.

- Alternative methods: Innovation and ideas are what built this world. Choose a different pay package instead of laying off employees. Introduce programs to strengthen employee skills. We like to mention the strategy “homesourcing” by David Neelman, the founder and CEO of JetBlue Airways Corp. Instead of outsourcing to a different country, he created an airline reservation system where the employees work from home in between babysitting or other activities. He believes that it is productive and profitable.

    Offshoring has its advantages but it would be hard to come up with guidelines to identify jobs that should be sent offshore. From a global perspective the offshore countries gain more jobs that help their economies grow. It also builds up a
healthy economic relationship between the countries involved. But for the local economy, a job lost is lost until unless it’s created elsewhere to benefit the person who lost it and in turn benefit the economy. Using the concept behind these guidelines, companies could ask themselves if there are actually better ways of increasing profit other than offshoring or else how they can operate harmoniously with the economy and the offshore country without breaking the interdependency.

3.2 HR Issues

Layoffs can cause major morale problems among the employees in the company. The upper management must take time to communicate with their staff. “If your intention is to lay off some workers and move work offshore, let them know” says Textron Financial’s Raspallo. But it’s not always the case. Sometimes the employees are laid off and not treated right. One of them is Tom Kennett, whose employer was IBM. Mr. Kenneth says he was forced to train his Indian replacement. “They came and said your job is being outsourced and you will train your replacement. If you don’t you won’t get your severance package.”

Labor is just another resource for the capitalistic world. But they are interdependent. The management and the employees of an organization worked together within the social, economic and ethical constraints to build the company. Terminating an employee can be at the will of an employer but as a company built on ethical and moral values, each employee expects a fair treatment that maintains the interdependency.
Laying is always not easy for an employer but this situation points out the difference between letting a worker go by settling the payments and benefits and letting a worker go by denying his benefits if he does not train his replacement. Such actions can also affect the morale of other employees who have survived the lay off. They may not have any more faith in the integrity of their employer and this will directly affect the productivity of the company.

Guideline:

It would be good for an organization if an employee – employer relationship should always aim for a win-win situation. There is interdependency here. The employer benefits by making money using the services of the employee and the employee in turn earns money. Incentives, bonuses and benefits strengthen the interdependency and relationship between an employer – employee. So offer bonuses or incentives for training the replacement. Let the employee know that though he/she has to leave, they are important to the company. This is a better practice and would only strengthen the bond a company has with the society.

To avoid a similar situation and to ensure a fair treatment it might be worthwhile to include the rights to severance package during termination in the employment contract or be legalized as a HR law. Such action would make the employee feel that they are important and also makes them feel secure in the event of a tumultuous economy. These guidelines strive to ensure a healthy and confident work atmosphere where the employee-
employer can build a trust between them. A strong bond gets the best out of both the parties and increases the productivity and profitability.

The United States is a country built by immigrants. The H1 and L1 visas are necessary to encourage talent from the outside world into the US. Offshoring has revealed the misuse of L1 visas. Such loopholes can also lead to serious security issues. If people can get into the country by claiming a fake work identity it can cause serious security issues. It would be advisable if organizations would perform proper screening of the resources and put in practices to ensure that this loophole is not further misused.

3.3 Computer Science Education

The advent of offshoring triggered the migration of tedious and entry level jobs such as data entry and call center jobs to countries with lower wage workers. Though companies claim that only low-level programming jobs are sent to offshore countries, there are high level jobs being outsourced too. This also includes software development, testing, analysis and other programming jobs. Finally all major industries are offshoring to gain more profits. This includes health care, accounting, manufacturing and entertainment industries. When jobs move out, skills move with them. At the rate at which the United States is losing software and computer engineering jobs, for example, how much longer will U.S. engineering schools be offering this major?

It can be argued that there is a shortage in labor and offshoring balances the supply – demand chain. A question might arise as to why should companies care where
they hire workers from any part of the world as long as their profit oriented motives are met? But let’s not forget that the companies including the giants like IBM, Microsoft and Google are known as American companies. These companies were started and built by the people of this country. They didn’t need cheap labor or talent from other countries to rise to the status that recognizes them as a Multi-national company. All the companies that outsourced once only had workers as well as customers from their own country before it became global which implies that there is interdependency between the company and its country fellow men. So instead of resorting to offshoring to find talent, the questions to be answered are why there is a decline in quality labor and what can be done to solve this problem.

There has been a decline in the number of enrollments for computer science in universities since the inception of offshoring. This can be due to the fact that a lot of students especially for Masters and PhD programs in graduate schools are international students. These students had decided to work and stay in the US and had also made major contributions in various fields of technology and development. From a global perspective, bright students in other countries no longer have to come to the US with the dreams of working for IT giants like Google and Microsoft. They can stay in their home country and also achieve their dreams. With more offshoring the channel for attracting talent to the US might be getting narrower.

According to Forrester Research, in the next 15 years, more than 3 million US white-collar jobs, representing $136 billion in wages, will depart to places like India, with
the IT industry leading the migration. There is a possibility that, in the long run with offshoring, companies will get richer and invest more in their home countries creating more opportunities. This is hard to believe when more jobs of higher level are being sent offshore.

Guideline:

If there are shortages in talent, departments responsible for the future of education in should investigate as to what can be done to produce quality professionals in the country. Set up channels that facilitate the interaction of universities and the corporate world. Encourage the discussion of both the advantages and disadvantages of outsourcing in universities for better awareness.

As Ron Hira, chairman of the R&D policy committee with the U.S. branch of the Institute of Electrical and Electronics Engineers (IEEE) has mentioned “The U.S. needs a coordinated national strategy designed to sustain its technological leadership and promote job creation in response to the concerted strategies being used by other countries to attract U.S. industries and jobs.” We believe the government should set up a department that should approve the jobs before they are sent out. It will be beneficial if this department aims at setting up policies that will build a framework for education in technology and science. The early forms of offshoring had only affected the blue collar workers. Adequate training and acquisition of technical skills were advised as a remedy. But the current offshoring of white collar jobs only emphasizes the need for such policies.
This might sound like a ludicrous idea when Corporate America is actually a major source of funds for political campaigns. But there have been efforts from several states during the last election. Colorado, Wisconsin, Indiana and Minnesota had introduced legislation to ban the offshoring of contracts. It was followed by a US Senate bill banning private firms from outsourcing federal government contracts overseas. This measure, attached to a $328 billion omnibus appropriations bill, was sponsored by Ohio Republican Senator George Voinovich. Though it can be considered to be an attempt to bolster the Bush administration during an election year, we hope in future there will be a government body to control the outflow of jobs.

The ACM report says something which can provide an insight to the future of our educational system “Most of the graduates of the Indian Institute of Technology which are the best in the country, found that there was a paucity of jobs for them at least in the years from 1953 until 1998. Because of this they started migrating to the western countries, particularly the US.” It’s important to invest in education and technology for the growth of a nation. But all efforts directed towards this will fail if there are not rewarding secure career opportunities. Our guidelines do not discourage offshoring but provide an insight into to how the application of this strategy can help us build talent and also to retain them in our country.
3.4 Technology and Research Drainage

The initial bloom of IT research occurred in only a few select locations in the United States and a couple other countries in the aftermath of the Second World War. The situation hasn’t changed much according to data collected by Thomson ISI science citation index for the years 1999 – 2003 which states that about a third of computer science papers come from the United States alone and a majority of the remaining from European countries, which are the traditional centers of concentration of IT research.

One of the reasons behind the strength of the US as a world power is the pool of its talented researchers and scientific knowledge. A majority of this pool is filled in by researchers who are immigrants or students from other countries who came to the US for their advanced degrees and later stayed on to become permanent residents. This migration of scientific talent from the rest of the world was fuelled by substantial government funding in the US, something which was not present in their home countries.

Globalization provides an opportunity for researchers from around the world to work together and participate in IT research as a group despite the funding from their government. It builds the infrastructure and talent for a 24x7 research institution. When people in one country are sleeping, the other country can keep working. It also provides improved opportunities for the top researchers due to increased global competition for
their services. A global research institution means that potential funding for the development of new technologies can be invested in those countries that can most efficiently and effectively create research results.

However there are a few drawbacks. From an individual point of view this can limit the opportunities of the least skilled researchers in the traditional centers of concentration for whom global competition means declining wages or even loss of jobs. From a country point of view an investment in any country would require a consistent long term effort. The required measures include building basic economic infrastructure, providing first rate education through the doctorate degree level to train high quality researchers and attract first rate students who stay in the location, and providing ample direct government funding for research.

“The reason US companies can innovate without spending much on R&D is that they are learning each time they do an implementation.” says Ron Hira, “You build up that knowledge in those workers and there’s spillover as they move into other sectors and start new software.” Any design or methodology was first a practice before it became a theory. The situation looks familiar to the hardware and semiconductor industry in the 1980’s. South Korea, Taiwan and other Asian countries are now the global leaders in notebook PCs, wireless phones and digital displays. With most of the major IT giants and companies in different sectors resorting to offshoring, it gives offshore countries like India a concrete stage to emerge as a future leader in the software industry. From a long-term stand point this can sabotage the U.S. technological edge over other countries.
Google, Microsoft, IBM and other IT giants have already started their research bases in India and China. With globalization, the infrastructure and funding for other countries will grow. It provides improved opportunities for researchers who live outside the traditional centers of concentration of IT research. For an individual researcher this means an opportunity to stay in their home country and invest their talent without having to move to the traditional centers of research. In the long term this phenomenon will lead to a decrease in the migration of scientific talent from the rest of the world to the traditional centers of IT research. This will lessen the dominance of the US and other European countries on their grip as leading research centers of the world. With globalization IT research is becoming more equally spread over the globe and it is likely that India and China will emerge as centers of IT research rivaling the United States and Western Europe.

Guideline:

If the companies are not offshoring research for cheaper labor, then is it for better talent? We raise the question that if it was for lack of talent, then who developed the existing cutting edge technologies? It was technology itself that made offshoring possible. The strength of IT industry and its growth over the years were made possible by quality research, innovative ideas and hard work. Jobs that involve design, research and innovation are those that can propel the strength and growth of any industry. As Ron Hira mentioned, “If we don’t have that knowledge base here we will lose out on the innovation and spillover.”
Moving R&D jobs offshore clearly implies loss of research opportunities for the client country. It’s hard to come up with a guideline that would let both the parties be actively involved in research and at the same time. A strategy like having the design and innovation in the client country and the implementation in the offshore country can still make use of a 24/7 research and development center. This gives the researchers in the local country more time to work on building new technologies and not worry about the implementation. We would like to emphasize on the fact that building a global research center should not end up draining away the technological strength away from the US.

3.5 Security and Privacy

The basic principle of security is that the longer the supply chain and lines of communication, the more opportunity there is to attack them. It is very evident that a chain is only as strong as its weakest link. It might be true that issues related to security and privacy will persist until the end of the digital world. There is always a constant battle between the malicious guys and security professionals. We believe that with offshoring we have aggravated the existing risks and created way to new risks.

Australian and British press reports identified a black market in India for personal information gleaned from financial offshore processing centers. Consumer complaints led to the arrest of employees at a center processing Citicorp data in Pune, India. Recently in June 2006, a security breach at HSBC’s offshore data-processing unit in Bangalore has led to £233,000 being stolen from the accounts of a small number of UK customers.
These incidents were caused by employees who had easy access to confidential data and work environment that does not have enough security measures to prevent or minimize such risks.

Sensitive data does not just involve bank account information but also intellectual information. Many nations do not respect other nations’ patents or copyrights: most require that individual patents be filled in their country. If an offshore country develops some new idea based on a patent from the US, who has the right to the new idea?

Though there are considerable gains for the corporate world there are commensurable risks for the consumer world. We feel it is imperative to bring to everybody’s attention that this is not just about risks for companies that engage in offshoring, but also about those innocent people whose data has been compromised and also about the defense and economic security of countries.

Guideline:

A question that can arise is “Whether a service is offshored or not there is always a risk for cyber crime. So how can our guide lines help prevent this? Let us first bring to the attention that the bad guys we are talking about are not members of the hacker community or a disgruntled employee but employees in offshore country who had easy access to sensitive data. So if we focus on the cyber crimes evolved from offshoring, we would see that the cause was due to lack of strong security practices and principles. In the United State, we have cyber laws which state that stealing sensitive information is a crime. We have laws which forbid us from using pirated software. We believe such laws
alone can make a huge difference. To emphasize our intention here, we also like to bring to the attentions that the person who has stolen data in Bangalore wasn’t legally punished for his actions.

Most of the offshore countries don’t have stringent cyber laws unlike the laws in the United States. This opens up more opportunities for cyber crimes. We suggest that all countries involved in offshoring put into effect cyber laws which recognizes violation of data protection as a crime. If it takes time for a country to implement this law due to the delay caused in the legal system, then a contract should be signed which would permit the client country to prosecute the worker who commits a crime. A contract effectively written can be a strong security tool to tackle offshore cyber crimes.

The world might be getting flatter but the United States still has better tools and infrastructure for security. Though the infrastructure in the offshore countries are getting better and probably good enough to support the business, it’s never 100% reliable. After all the data belongs to a different country and an absence of ownership or commitment is prominent here.

Use best practices and technology to establish maximum security. By best practices we mean creating a work atmosphere which creates less or no chance at all for workers to leak information. For example, if the job involves dealing with confidential information, then the employees coming in for their work should not carry any kind of paper or materials to store information. If the job involves using scrap paper, it should be provided and later confiscated before they leave the work place. If they are using the
computer, they should be given access only to the necessary applications and/or intranet. Ensuring such practices can mitigate leakage of data by otherwise spotless malicious guys. All the employees should be screened every time they leave and enter the work place.

Our guidelines ensure maximum protection to sensitive data. By implementing such guidelines, there would be strict laws and more responsibility and safety to the information of innocent people.

### 3.6 Cultural Issues

The primary reason why companies chose to outsource is increased profit. It is also an opportunity for two companies in different parts of the globe to set up a channel to promote and exchange culture and economic relationship. In fact, experts say there's a direct correlation between a successful outsourcing arrangement and how well the two companies mesh culturally. Gary Griffiths, CEO of Everdream, an aftermarket IT and OS service company, says "our outsourcing effort to Costa Rica didn’t work all that well primarily to the dissimilarities between our culture and that of our Central American provider."

"Those (companies) that are dissatisfied are focused on only the cost,” said Lance Travis, vice president, research, at Boston-based AMR Research Inc. “They went into this relationship trying to get the cheapest price. To those that were satisfied, cost was important, but so was cultural fit.”
Major differences in the values and traditions can cause challenges for harmonization since they derive from strong differences in cultural and religious background. For example, British managers in an outsourcing relationship with a particular Indian software supplier found that Indian programmers in deference to authority would not voice criticism in face to face meetings but would sometimes send their opinions in email messages after the meetings had disbanded. The British managers felt frustrated at this behavior.

Such problems will happen and it requires effort from both sides in the cross-border collaboration to work on building a set of practices that will help in building a stable and friendly atmosphere. “Finding a company that has the right cultural fit requires work”, said Jeff Kaplan, president of ThinkStrategies Inc. in Wellesley, Mass. In this section we discuss some important cultural issues that need to be considered before a project is outsourced.

3.6.1 Work Culture

Each country has its own unique ways of management and business rules. For example, Indian software companies have found they need to approach communication with U.S. and Japanese clients in very different ways. U.S.client companies normally work with extensive written agreements and explicit documentation, reinforced with frequent and informal telephone and email contact. In contrast, Japanese clients tend to prefer verbal communication, more tacit and continuously negotiated agreements and less
frequent but more formal use of electronic media. If a company opts for offshoring, adjusting and adapting to new cultural scenarios is imminent.

National holidays in one country may not be a holiday in another. Some countries may have more religious or cultural holidays which might be important to than client country. Some call centers in India which serve clients in the US and the UK were open on important Indian holidays when all other organizations were closed. This pattern can definitely cause a social impact in the offshore country.

3.6.2 Language and Society

Challenges not only concern the need to adapt to different ways of working but to cultural norms of social behavior, attitudes toward authority and language issues. It is easier for Japanese companies to offshore projects to countries that speak Japanese or for Norwegian outsourcers to express a preference for Russian software suppliers rather than Asian companies. This can be explained in terms of similar mind set and the ease of communication.

Guideline:

- Identify a set of business rules for communication and interaction. In spite of different business rules harmony can be achieved by including common practices and processes.

If an American company prefers a lot of documentation and Japanese company prefers verbal communication, then design a Business communication
system where Phase 1 would be verbal and Phase 2 would be written communication. This would give an opportunity to both the parties to express themselves without any confusion.

- **Fault Tolerance** - Globalization makes it possible to apply the concept of fault tolerance in computer science to the service industry. Globalization makes it possible for many of the people who manage machines and software in data centers to be separated from the centers themselves. So if one country has an important holiday, the client can route the computing calls and expertise to elsewhere.

  In fact that’s what happened on April 12th when the death of a famous actor forced a halt to operations of IBM in India. To avoid interruptions, the data center management duties were quickly shifted to Boulder and help desk work to South Africa. Implementing this strategy while recognizing major cultural holidays in the offshore country would develop stronger ties and cultural relationship to countries on either side of the trade.

- A method that can help in alleviating cultural problems is to offer a pre-posting cultural training for employees. Train employees to know more about the new scenario to which they will have to adapt to. HSBC, a UK based bank had provided linguistic and cultural training to its employees in the offshore country, India who were to take over its call center operations. They had also sent a UK citizen to actually explain and introduce them to their new
customers. Session such as adapting to the accent and learning about the historical and geographical facts should be included in the training. The structure of the program would again depend on the countries involved.

- Offshoring requires expatriates to interact with clients in a different country. It is unrealistic to expect them to think and act like locals. To resolve any issue it is efficient to involve someone who can bridge the gap. For example, people originally from India but with higher education and long term residence in the US can be sent to India for offshoring projects. It's also meaningful investing time in forming a group which consists of people apart from technical excellence, are also open and adaptable to the different living conditions and work environment. Such methods can be effective in overseeing complex outsourcing projects.

A small fraction of people from the US and Europe are seeking jobs and are willing to work in India. Experts say there are about 30,000 foreigners working in India. And this number is expected to grow in coming years. Until now offshore outsourcing has been mostly limited to large companies that have big chunk of work to send offshore. With more countries getting involved in offshoring, there will be an increased interconnection in the society. Just as the Internet made this world smaller, we envision that globalization will lead to birth of a global culture.
4. Future Of Offshoring

The United States is the leader when it comes to IT technology, research and education but it is also the leading provider of offshore projects. According to the 2005 Duke University CIBER/Archstone Consulting study, 73 percent of Fortune 2000 companies say offshoring is an important part of their overall growth strategy. Companies choose offshoring for a simple reason and that is to save more money. The Everest Research Institute predicts that those savings will continue to drive offshoring for the next 30 years. Offshoring is here to stay.

We don’t discourage offshoring but we believe it’s important to apply some rational and practical thinking before companies completely embrace the concept of offshoring. In this chapter we examine the future of offshoring from a global and local perspective.

4.1 Why is IT Offshoring different?

The concept of offshoring is not new to the American business world. In the 1970’s the manufacturing industry and in the 1980’s the semiconductor and hardware industry faced the effects of offshoring. Though the white collar jobs weren’t affected, we saw a pattern that was common to those instances of offshoring. For the manufacturing and semiconductor industries, profits gained from the jobs lost were invested in the US which led to more jobs and growth in the economy. Also the effects
led to decline in the prices of the commodities. So the end result was positive. But there is one difference to the present trend when compared to the earlier ones.

In this current trend of offshoring, the product is IT or IT enabled services which are prevalent in almost all industries – medical, accounting, manufacturing and entertainment. In the United States, law firms are sending research offshore, accounting firms are farming out tax work, and investment banks are hiring Indian MBAs to write research reports on U.S. stocks. News agency Reuters recently fired 20 journalists in the United States and Europe and hired 60 reporters in Bangalore to do basic research on publicly traded American companies. So with the whole economy resorting to offshoring, the majority of the returns or profits will be invested in more offshoring. Instead of investing the profits in the home country, the current trend shows more investment in the offshoring countries. Consider the following facts from a business offshoring report in September 2004.

- Andrew Grove, chairman of Intel Corp., said last fall that India could overtake the United States in software and services within six years.
- In April, IBM Corp. bought a back-office support and call center company with 6,000 employees in India and the Philippines. That allows IBM to market its services to U.S. companies that might be reluctant to sign on directly with an Indian contractor because of the political backlash.
Informationweek.com dated June 6, 2006 says – “IBM to invest $6 Billion in India to Increase Offshore IT Services Offerings.”

Experts say that any new technology is bound to follow this trend which is evident from the offshoring of nanotechnology jobs bound for Singapore, home to Biopolis, a new $300 million state-of-the-art center designed to make the country a global leader in biotechnology research.

4.2 Future of Job Market

Almost every day we find in the news stories about IT jobs being shipped to low wage countries. This has created a doubt amongst a lot of young people about the future of Computer Science as a career. Low level programming jobs were the first to be sent offshore. Considering this to be the trend, it may not be feasible for new grads to climb up the career ladder to attain high level IT jobs. To make it tougher, high level jobs are also being offshored now.

So is IT still a good career choice? The reasons above do not support IT as a good career field. But there are some facts which say otherwise. The IT market has picked up since the bubble burst and shows a considerable increase in the number of jobs. So how is it that when jobs are being sent offshore, there are more jobs being created in the client country? There are a few possible explanations for this scenario though we don’t have data to support it.
This current offshoring primarily involves only IT or IT related services. This has also brought IT to the lime light. A lot of sectors that don’t implement IT have come to recognize its advantages in terms of profit and ease of business. They have started to implement IT in their businesses for profitability and to stay ahead in the market. Thus there has been a widespread use of IT in the society.

For those who want to pursue IT as their career, they will have to shed the old image of an IT professional as a person with only technical skills. They may have to add more skills outside the technical zone to make them more attractive to employers. Universities should start to focus on providing training where individuals are exposed to the current changing technologies and a curriculum where they also develop their soft skills such as oral and written skills and team work skills. They can also get management training and experience. This will prepare them to meet the changing demands of the market and add more flexibility to their skills. Jim Abolt, vice president of human resources at Trilogy Inc., which has moved its software development to Bangalore says “The techies of tomorrow will say, 'I'm a business person who specializes in technology.'"

Offshoring is now an important strategy used by companies for profitability and to stay ahead in the competition. It is becoming an indispensable part of the business and education world. We expect that universities will recognize this and support it to equip their graduates to meet the changing demands of the business world. We have degrees for Network Administrators to handle the infrastructure of a business, Tax Consultants to handle the taxes, Financial Engineers to handle the finances. Similarly there is a high
probability that offshoring will influence the Business and IT departments in universities to start offering training or courses to bring out specialists to handle the various components of offshoring. We foresee careers as offshoring specialists skilled in business and technical knowledge to provide assistance and knowledge in choosing the kind of offshoring suitable for a company.

4.3 Future of United States

The United States is the leader when it comes to technology and innovation. There are many factors that contribute to the technological power of a country, the prominent ones being funding and quality researchers. Funding or money has been there to support projects and ideas that created cutting edge technology. We don’t see how offshoring will directly increase the funding capability of a nation. So now we turn or focus on quality researchers or talent pool. If our country lacks talent in research then how are we to this day the leading power in technology?

We go back to chapter 3 – Issues in offshoring. The United States has been a center of research. This was made possible because of the ample amount of government funding for technology and research. This has attracted a lot of quality students and researchers from other parts of the world to come to the US and invest their brains and talent to provide breakthrough ideas and innovation in various fields of research. So we really find it hard to believe that setting up research centers in low wage countries is to meet the supply of talent.
As mentioned in chapter 3 offshoring research or setting up research centers in other countries will reduce the inflow of talent to the US from the outside world. More than 50 percent of graduate students in the U.S., in applied sciences, are foreign nationals. Money will no more be a concern for such potential students and workers in low wage countries with the salaries rising up. In an article dated on June 27th '06, India's premier software body, the National Association for Software and Service Companies, said starting salaries had shot up between 11 per cent and 15 per cent in the past few years, while wages for senior managerial positions had risen by 30 per cent.

With offshoring, nobody needs to come to the United States to work for leading Multinational companies and learn new technologies. Given the current situation, the United States will not be attracting more talent as before and the world is getting flatter.

In the early stages of offshoring, the companies only shipped entry level jobs with the target of making profit. Now all levels of jobs are being shipped irrespective of their pay. This pattern is going to be repeated in the research field. "If core engineering jobs continue to move, in the long run, the source for innovation will be offshore. It will not be here," says John Steadman, U.S. president of the Institute of Electrical and Electronics Engineers Inc. "The effect on U.S. leadership in science and innovation will be devastating." According to Lori Hawkins of www.statesman.com there is already an increase in the number of Indian software patents. Creating a global equilibrium in technology power might be good news from a global perspective but if the R&D field
follows the pattern of offshoring manufacturing and IT jobs, then the United States will loose its position as a leading nation in technology.

We all are now aware of offshoring and its pros and cons. So what is the real future of offshoring? Since the effects are on a global scale, it’s a phenomenon that cannot be ignored and its after-effects can be more profound than Y2K or the dot com bubble. It started with the corporate world eying offshoring as a strategy to maximize their profit and yes it paid off in terms of profit. So is that the end of offshoring? Reports show that the salaries of workers in low wage countries are also rising at a fast rate. India's premier software body, the National Association for Software and Service Companies (Nasscom), said starting salaries had shot up between 11 per cent and 15 per cent in the past few years, while wages for senior managerial positions had risen by 30 per cent. Experts say that in a few years the salaries of low wage countries will rise up to that of the American companies and the profit will come down which will force the companies to bring the jobs back to the US. We believe this might happen but if we analyze the future this is only one of the possibilities.

4.3.1 Will the jobs come back?

www.usnews.com has an interesting observation. The giants of Indian Software Market who started the trend of offshoring like Tata Consulting Services, Wipro Technologies, and Infosys are starting to hire in the United States. This goes to show that the talent pool in the offshore countries is starting to get tapped out in spots, leading to
wage increases and demand for the better workers. The Indian IT firms are aiming upmarket just as their bigger American competitors, like IBM, Accenture, and EDS are aiming down. "They are certainly trying to move up the chain," says Ron Hira, a professor at Rochester Institute of Technology and coauthor of *Outsourcing America*.

The article also mentions – “Wipro, for instance, which is now a $1.8 billion company, doubled its staff over the past three years and has a profit margin of nearly 20 percent. (IBM's profit margin, by contrast, is about 9 percent.)” Surya Kant, North American president of Indian IT giant Tata Consulting, says that beginning this year, Tata will recruit American tech and engineering grads on college campuses such as the Massachusetts Institute of Technology and the University of Georgia, schools where Tata already runs research programs. Overall, Tata will hire about 500 Americans this year, Kant predicts. "It is more expensive," he acknowledges. "But some work must be done here."

Given this scenario, we believe the jobs won’t come back, also due to the following reasons.

- Companies that need IT services are no longer going to depend on the American companies for high quality software. India, China and other low wage countries would be then be centers of high quality software development.
- The US would no longer be a super power in IT. The offshore countries would rise up and would be recognized as world leaders in IT. The IT hardware and semiconductor industry shipped jobs to Asian countries and now we no longer depend on
the US to produce high end hardware products. We look up to Asian world to produce high end electronic goods and advancements in that field. This is bound to happen for software field. India, China would by then be producing high quality software and the world would look up to them for advancements. In fact there would be some stiff global competition for the US companies.

- Jobs were sent offshore with profit as the motive. It is easy to move IT or IT enabled jobs. They do not incur costs like manufacturing and production jobs which require capital to build the infrastructure and production bases. So in the event that salaries reach a global equilibrium and the companies aren’t making much profit, one might think that it’s easier to ship the jobs back. Lets also not forget that when companies offshore they also make profit from other factors like no retirement benefit costs, no payroll taxes no severance pay, no unemployment compensation fund premiums etc. Bringing back the jobs also means implementing all of the above mentioned factors. This will incur higher expenses for the companies especially when the salaries for IT professional would be on a global level.

- Let’s turn back to history to see if we can see some patterns repeating.

  ➢ The U.S. textile industry began in New England, but after the Civil War, manufacturers gravitated to the Carolinas in search of lower labor costs. After World War II, textile manufacturing tended to head offshore to countries such as Brazil and China, making for a kind of double migration.
In the early part of the 20th century, Ford began making cars in the United Kingdom for a reason that had little to do with labor costs: It wanted to base some of its operations close to British customers. After World War II, U.S. automakers began opening plants in Mexico and Canada in pursuit of lower employee costs.

The hardware and semiconductor industry offshored production to low wage Asian countries. Not only have these jobs stayed there, Asia is now the super power in electronics industry.

U.S. steel companies such as Bethlehem Steel faded in the face of international competition. Now, much industrial-grade steel is produced in the lower-wage nations of Brazil and China.

In his book - Take this job and ship it, Senator Byron cites an excerpt from a presentation by IBM officials Harry Newman and Tom Lynch. They said “The good news is that we have not been cited in the press a lot for what we are doing here. A couple of years ago we went to Mexico with out PC business as a cheap source of labor. Now Mexico doesn’t look as cheap as some other labor markets”. If the software giants are following this idea how can we expect other companies to compete with a different strategy? There really aren’t any facts that support the idea of jobs coming back.

We know that the strength of a nation is defined by the economy. The major goals of offshoring are profitability and better products and services. These products and
services account for a larger part of the profit which is directly related to the consumer market. If we examine the market we would see that the largest consumers of US products are the people of this country. A consumer market is driven by the purchasing power of the consumers. Given this scenario, what would happen if we impair the purchasing power of the consumers? What we don’t see is taking the jobs away is slowly breaking down the middle class and is in turn affecting the consumer market of this country. Every project that is sent offshore also takes away jobs from the country which implies breaking down the economy. If we examine this situation, in the long run offshoring will weaken the market and in turn will reduce the profits.

In this chapter we are trying to show what the future could be given the present situation. Senator Byron says that “Wealth is produced by what you produce, not what you consume.” If we keep shipping jobs and production, the future would see us as a nation of consumers and no economy stays strong as a consumer economy. The future depends on to what extent the corporate world recognizes the impact offshoring has on the economy and their countrymen, whether the government would pass laws against it or bring rules to tighten the transfer of jobs. Whether the government would pass laws against it or bring rules to tighten the transfer of jobs is yet to be seen.
5. Bibliography

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