Outsourcing: Past, Present and Future

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IT and Public Policy

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Abstract

Outsourcing is the buzz word of the new millennium – while companies are increasingly moving jobs offshore to cut down costs, the public is feeling cheated that their jobs are being "stolen" by cheap, foreign labor. In this report, we briefly discuss the rise of outsourcing in the IT industry, and what makes it so different from outsourcing in other industries. We then analyze the current market and discuss the impact of outsourcing on the IT industry, and the various forces shaping this business practice. Looking forward, we discuss the future of outsourcing and make some policy recommendations to address some of the issues that we have identified.

1 Introduction

Much has been said regarding outsourcing in the past couple of years. This hitherto unfamiliar business practice has suddenly grabbed center stage attention, and is now the focus of politicians, the press, companies, and workers alike.

In this report, we attempt to take stock of the current situation – where does outsourcing stand today and where is it poised to go in the future? To gain a better understanding and perspective, we look at the historical origins of outsourcing and consider the various factors that drive outsourcing in today's world.

Based on our survey, we propose recommendations for public policy and reforms that we think will help ease this transition – from a "national" economy to a "world" economy and from a world of in-house production to a world of outsourcing.

2 Past

2.1 Deep Roots

The history of outsourcing is deeply embedded in the history of the growth of the Modern Business Enterprise, which sprang up in the latter half of the 19th Century. Historians in the past fifty years have helped us to understand this sudden growth. As the saying goes, what is old is new again. The changes in modern business practices strongly resemble trends that took place over a century ago. It is important to follow the historical model that the leading business historian Alfred Chandler set forth: value judgments are to be left out and only what actually happened should be talked about.

Alfred D. Chandler is probably the most influential business historian in American History. A Harvard graduate, and now professor, he directed business history towards objective truth to help explain businesses' stunning growth and impact on America. His "school" was a clear backlash to individual biographies and the value judgments that came with it. Chandler did not attempt to ask: "was this good or bad", but instead asked, "Why and how did this happen?" The different goals gave far different results. In the Robber Barons vs. Industrial Statesmen debate, Chandler was "faulting both sides for failing to make the requisite effort to understand the managerial revolution in American business; for not doing even a fraction of the primary research necessary to support sweeping characterizations of business executives as either Robber Baron or Industrial Statesmen"; the result was that Chandler "transformed the nature of the field." ([1], p. 10) The point to be made for our policy makers is that to solve future problems, we must understand what is occurring in the business world, without attaching "good" or "bad" to the forces behind the actions of businessmen.

The Forces Set the Stage For the first time in history, the late 1800s saw some countries become nations of abundance, instead of scarcity. Goods of all kinds were provided at a lower price in vast quantities. This was made possible by a series of technological improvements. The first major innovation was the railroad. This was an evolution: countries moved from turnpikes, to canals,

and finally to railroads. It is also important to know that states themselves promoted these innovations by providing all types of subsidies. The second major innovation was in the field of communications: the telegraph provided near instant ability to keep in contact with other district offices of a company. Communication was also far more reliable; businessmen could be sure their messages were arriving at their desired location. JoAnne Yates said it best in *Control Through Communication* (1989), "the spread of the telegraph and of railroads encouraged firms to serve larger regional and national markets, while improvements in manufacturing technology created potential economies of scale" ([2], pp.41-45) The importance in a modern context is clear: there will ultimately be more advances in communications and transportation, creating new business models. There will not only be national markets; there might be global ones, which would be the case with modern outsourcing.

Been There, Done That History has a way of repeating itself, having humans respond to similar movements. Generally the problem is that Americans find that there is something new about what they are facing. Offshoring seems like it is new, and it is, but there are similarities with past events in American history - most notably after the Civil War when northern textile factories moved down South. State governments, such as Massachusetts, had to deal with this movement of employers. At the turn of the century, the Massachusetts government imposed standards of conduct that were too high on businesses. Businesses tried to get corporate charters to get away from these restrictions and "in order to meet the strong competition of out-of-sate businesses which had thrived with liberal charters." The Bay State had much more taxes than other states, even taxing the market value of the securities in excess of property values. This, naturally, caused many successful businesses to flee to other states. The businesses that continued to do business in the state mostly charted themselves in other states; in 1901 the number was almost two-thirds. Massachusetts became wise, passing corporation acts in 1903 and 1908 to ease standards. In the past, a protective tariff could help manufacturers, but with competition intensifying from domestic sources, the government could not give such help. ([3], pp. 291-295, pp. 9-10).

The Massachusetts situation provided even more complications in terms of profits of corporations against livable wages of workers. The Fall River textile workers situation illuminates this case. The industry had to compete with southerners and "in the recession of 1903-04, southern competitors had shown what lower production costs could mean in a competitive market; after 1903 it had become increasingly evident that southern manufacturers could claim a large share of the market in good times as well." Increased competition forced a series of successive wage cuts that resulted in a strike in 1904-05. The government stepped in, with Governor Douglas settling the matter, basically reaffirming the employer's case. Eventually, a sliding wage scale, which was tied to print cloth prices, was implemented; it worked for a year, but as prices remained low, wages did not budge much ([3]). The lesson that the American state governments had to learn was that economic forces controlled wages. If employers could find a better bargain in another location, they might be required to relocate out of necessity, rather than desire.

Foreign Workers In the history of industrialization and the modernization of developing nations, it has long been a tradition to seek foreign help when possible. In fact, one of the greatest success stories in this tradition has been the Japanese tale. After its revolution in 1868, Japan was on the quick path to modernization. They realized that they needed the assistance of experts, so they hired foreign technicians and engineers to set up their factory system and taught native Japanese how to operate the high-tech equipment ([4], p. 375). Educated foreign workers can be a pivotal addition to a growing economy; however, there have been examples where the move has gone too far and later proved to be detrimental. A prime example of such a case was in Russia during the late 1800s. "Russian Industrialization was carried out by foreigners – a successful international firm like Singer, for example, or the large number of British engineers – or had at least been created by foreign investors." The trend became so excessive that by 1914, 90% of mining and nearly 100% of oil extraction was foreign-owned, not to mention similar high numbers in other industries. Though short-term benefits were clear, Russia was far less of an industrial power than how the world saw it. ([5], p. 234)

2.2 Rise of Recent "Outsourcing" and India

The 20th Century has provided an even greater leap in technological and communications innovation. History has been proven that old trends reemerge when there are great changes to a society; it was only natural that some old business tactics would become important in the modern world. After World War II, certain developments made business more "global". The first use of outsourcing in recent history was in the 1950s with time sharing (see section 2.4 for some more details). It lasted for 25 years, but as technology continued to advance, so did new outsourcing ideas. In the 1980s, major consulting firms, such as Arthur Andersen, invented remote management services. As Alexander Factor writes, "A customer's systems, networks, and applications were monitored and managed remotely from a Network Operations Center (NOC), and the customer was assured high service guarantees through the implementation of so-called Service Level Agreements (SLAs). Customers liked these services and bought them mostly to ensure availability for their systems and networks." New models of outsourcing came about in the late 1980s and 1990s with the profound leap in Internet technology and software. IT outsourcing was a result: companies wanted to divest from their own facilities, operations, and personnel to focus on other business interests. Companies could put their resources in other important areas, while leaving outsourced areas to specialize in the area that they found less important; this was sort of a modern "division of labor." ([6], pp. 4-6)

The question that plagues American society is, "Why India?". Many of the outsourced IT jobs and foreign workers that come to the United States are from India. There are countless reasons why this is so, but from a historical standpoint, we can see that one of the prime factors has to do with higher education. In Germany during the 19th Century, one of the keys to its success was the educational system that was built. Germany had many trade schools called Gewerbesculen that fused technology and management together, while also having technical schools, Technishe Hochshulen. At the University level, science and research was the primary focus, with cutting edge experiments tak-

ing place there that made their system "the world's envy and model." The Germans were not innovating by trial and error; instead, they were using scientific methods for improvement, which led them to dominate the electricity and chemical industry. ([4], pp. 282-283) The United States passed its Land Grant Act in 1862, during the Civil War, to found mainly technical universities. Most of the new schools had specialties in agriculture and mining, providing the scientific basis for improvement and help to the business community. Some of America's premier engineering schools were founded as a result of the Land Grant Act, including, but not limited to, University of California, MIT, Cornell, University of Illinois and the University of Texas.

India has recognized the same necessity. The country, which only gained its independence about fifty years ago, has 216 Universities, including 33 agricultural schools and 12 technical ones. It all happened because of the role of the state, just like in the United States and Germany: "This massive development has been guided by a process of planning and recommendations of several national commissions set up by the government of India." The University Grants Commission, established in 1952, assures that the quality of the Universities is sufficient. India knew that certain industries had to be fostered as well, which explains the existence of the All-India Council of Technical Education, overlooking the curriculum of the technical schools to make sure all materials are modern. In 1964, the Ministry of Education set up a commission to come up with a list of goals for Universities. Most of it was the traditional rhetoric of the "search" for truth and such, but the third goal was more likely its primary goal, "help improve productivity by emphasizing work-experience, vocationalization, improvements in scientific and technological education and research." ([7]) This has helped India become a player on the world stage: they have been able to build a labor force that can send workers to foreign lands or stay in their homeland to work for Multi-National Corporations (MNCs) that can use their skills cheaply.

History Repeats Itself The movement towards outsourcing in a new global economy would be the natural path of human societies. Practically every nuance of the global economy was to be expected, as a natural outgrowth of previous technological improvements and business movements, and most issues have been dealt with before. It is important for our policy makers to realize that they are not breaking new ground; many of their answers lie in history. There is only so much that governments can control. For the past century, moving towards industrialization and a technological society has been the goal of almost all nations. In the new global stage, nations are working closer together than ever before. The problems that are associated with this collaboration must be dealt with in a sincere manner, with great care being given to the impact of local policies on the world's people.

2.3 The Economic Argument

Social and market forces aside, there is a rather old but fundamental theory in economics that gives economically and theoretically sound arguments for outsourcing. This is the theory of **comparative advantage**, originally proposed by David Ricardo, in his seminal text *On the Principles of Political Economy and Taxation* ([8]). Simply stated, the theory says the following:

- trade occurs due to differences in (production) technology
- trade is advantageous to both parties
- even a technologically inferior country can benefit from free trade
- conversely, a developed country can compete against some low foreign wage countries

Thus, even though Indian workers may not be as productive or highly paid as U.S. workers, they can still compete with them for certain services; further, both India and the United States can benefit from this service exchange. For a detailed numerical example, see [8]. Informally, a country is said to have a comparative advantage in the production of a good (IT services, in this case), if it can produce that good at a lower *opportunity cost* than another country. The opportunity cost of a good is defined as the amount of opportunity (in terms of the production of another good or service that the country can produce) that must be given up in order to produce one more unit of the good of interest.

As an example, suppose India and the U.S. were trading/competing for two goods/services – iron and steel, and IT services. India would have the comparative advantage in IT services relative to the United States if India had to give up less in terms of iron and steel production than the United States would have to give up to produce another unit of IT services. That is, if the U.S. moved one unit of labor from iron and steel production to IT services, it would lose more iron and steel production than if India did the same. This is assuming that the cost and productivity of labor in both countries is the same. Similar situations can be worked out with a more realistic assumption – that is, both the cost and productivity of labor in India is less than that in United States – but the basic idea remains the same.

This is the economical principle behind outsourcing, that follows directly from the Ricardian model of trade.

2.4 Outsourcing in the IT Industry

Now that we have a historical and economic perspective on outsourcing, let us focus on the IT industry in particular. Wiencek ([9]) looks at the growth of outsourcing in the IT industry as evolution through various stages:

1. **First generation: Extending functionality** Halfway through the century, IBM and other companies were building huge computing machines, giant mammoths occupying whole floors of buildings. While a lot of people would have loved to use these monsters, few could afford them. This resulted in the development of remote terminals and time sharing, that allowed remote sites to use these facilities. In this case, the customers outsourced *extended functionality* to the provider.

2. **Second generation: Physical outsourcing** Through the 1960s and 1970s, it became clear to everyone that computers are going to play a central role in cutting down costs across a breadth of industries, simply because computers help automate and mechanize tasks that are strictly regular and rule based – like accounting for instance. As a result, several large industries, such as banking and airlines, started investing in more

and more IT hardware and software. However, these companies did not specialize in IT, and very soon their systems had become far too complicated for them to handle. Very often the original manufacturer (companies such as IBM and EDS) promised end-to-end maintenance of these systems, thus outsourcing hardware and operations from their customers.

3. **Third generation: Offshore and Process outsourcing** As the industries embraced the new technologies, a lot of the tasks became fairly standardized and mundane – for example credit card processing, or customer support. Further, as organizations fought to cope with globalization and the free trade economies of the 20th century, they became increasingly complex and difficult to manage. The obvious solution was to outsource support and maintenance tasks of units to local suppliers – this helped cut down costs, as well as allowed companies to make better use of their local domain knowledge.

   Two particularly popular models here were BPO (business process outsourcing) and offshoring. Offshoring involves handing over the development, maintenance and support of a product/system/service to a supplier doing business in a foreign country. In BPO, an entire business function is provided by a third party – including process expertise, technology, operations and support. Thus, there could be outsourcing within the same country as well, but for the purpose of this report, we will mainly be focusing on offshored outsourcing and intra-company offshoring.

In the traditional model of the economy, goods were usually produced near the site of consumption – this lowered transportation costs and made distribution easier. Of course, one had to find a site that was also close to the raw materials required for production. People tend to apply the same principles in the new economy but forget that the mechanics of the world has changed. The world is becoming a smaller place by the hour – high speed communication networks make it possible to transfer information across the globe in practically no time and at a cost quickly approaching zero. As the name implies, the IT industry is all about information, and thus this "shrinking" of the world has implications for the IT industry. Now it is no longer necessary to produce goods at the site of consumption; a consumer of information does not care where that information is generated as long as he gets it on time. A company providing accounting services to customers in the U.S. might very well perform all of its operations half way across the globe in India. This non-tangible nature of information is what makes the IT industry so different from other industries and thus makes outsourcing IT a particularly attractive business model.

Yet another distinguishing factor that sets the IT industry apart from other industries like pharmaceuticals and manufacturing is that the products and services IT companies produce are seldom consumed by individuals directly. In that sense, IT is more of a business-to-business industry, and, therefore, its growth is fuelled by the use of IT services in other industries. As discussed earlier, automation and mechanization are the most commonly employed age old techniques to cut down costs. Most other industries (e.g. banking, airlines, insurance) are not all qualified to maintain their complex IT systems, and thus need to employ services from companies that specialize in these tasks. This is another force behind outsourcing, since IT services can now be treated as just

another commodity good for which there are many competitive suppliers.

3 Present

3.1 Wild Wild East

Gartner, a marketing research firm, says that India remains the current undisputed leader in offshore outsourcing ([10]). According to their survey, in Europe alone, offshore outsourcing would grow by 40% in 2003, and 75% of large and medium sized companies would have considered the use of offshore services by 2004. Further, "India accounts for 90% of the total offshore revenue, and a vast number of trained IT professionals". However, the survey also points out a number of other countries that challenging India's position like China, Israel and Philippines; and others that are just beginning to grab a slice of the outsourcing pie like Bangladesh, Thailand, Vietnam, Singapore and Malaysia. The East, is going wild!

As we have mentioned before, India's IT industry is growing at a vertiginous rate. According to NASSCOM, India's premier lobby organization for IT companies, annual sales of IT services in India are likely to surpass the $50 billion mark ([11]). The next section takes a brief look at why India is such an attractive destination to companies.

Why India?

- Human Resource As mentioned before, a legacy of the British Raj, and what has proven to be a boon to Indian workers, has been the strong emphasis on English proficiency. English apart, the Indian education system also fosters strong skills in mathematics and science. The same holds true for higher education and skilled human power. As mentioned earlier, India has more than 250 universities (over 900 colleges) and engineering colleges.

  A side effect of India's unfortunate population is that the education infrastructure manages to add millions every year to the work force – NASSCOM estimates that around 17 million people will be available to the IT industry by 2008 ([12]). Every year, India is consistently adding more than 200,000 skilled IT professionals, and this number is steadily growing ([13]).

- Government Policies

  As we discuss in detail in section 3.2.4, the legal and political environment of the host country has quite an impact on the choice of outsourcing location. India offers a tax friendly environment; it has a separate Ministry of Information Technology to look into IT related matters; IT has become an integral part of the national agenda.

- Infrastructure support

  Telecom bandwidth in India is over provisioned, and easily accessible to IT industries. Further, the government has taken many steps (more details in 3.2.4) to create suitable infrastructure – in terms of power, utilities,

property – for new business to come in and settle down easily (for instance, the creation of Special Economic Zones and Software Technology Park) [14]

- Geographical Advantage

  The natural time difference between India and the US and Europe is easily exploited to allow a longer working day. Especially for firms providing 24x7 customer support and services, this can significantly improve efficiency while keeping costs low.

- Umbrella Organizations

  Outsourcing to India is also very attractive because of the convenience of umbrella organizations in Indian firms. That is, many Indian firms have become a one-stop shop for international firms to utilize. As the Wall Street Journal reports, "They are still the world's pre-eminent code-crunchers, but now they are including hardware-software integration and call centers in their stables of services." ([15]) By allowing firms the convenience to handle all their business needs, Indian firms have become very attractive as recipients of outsourced work.

  There are also lobby organization such as NASSCOM – the National Association of Software and Services Companies – which monitor and push for government policy and regulations to foster the growth of India's IT sector, as well as run media campaigns to project the industry in the correct light.

3.2 Outsourcing Drivers

We now turn to present-day stimulants that encourage a greater degree of outsourcing. While a company may have many non-economic motives, such as committing to a social-contract with the community in which it operates, there are many economic pressures that force American businesses to consider outsourcing. In what follows, we will explore the different influences that corporations face that may lead them to outsource.

3.2.1 U.S. Tax Environment

Representative Charles Rangel, the senior Democrat on Ways and Means Committee stated, "It is no longer a question of whether the U.S. tax code encourages the export of American jobs. We now know it does" ([16], p. 94). If the people who make the policy are very aware that there is a problem, changes must be necessary. Before we can discuss changes, we must understand the current situation. The topic of U.S. taxes can be divided into three categories: general business taxes, loopholes, and incentives.

General Business Taxes It would not be difficult to argue that the U.S. has an unfavorable business tax environment when compared with other first world countries or those countries that are likely to receive outsourced work. The effective tax rate of United States is approximately 40%, which is one-third higher than the average of Organization of Economic Cooperation and Development countries. The effective tax rates in India and the Philippines, both

potential receivers of offshored jobs, are 10% to 20% lower than in the U.S.. In addition, the U.S. has a worldwide tax system that taxes profits made anywhere in the world, not just domestically as most other major countries do. At least in this aspect, the U.S. does not even encourage companies to seek profits in other countries. Such exports would count favorably against the growing trade deficit. These issues may drive companies to move their headquarters offshore to avoid unfavorable tax conditions. It seems logical that U.S. tax laws should encourage companies to seek profits in other countries rather than moving their headquarters and operations overseas. On the other hand, not taxing profits for overseas operations could expose a loophole, encouraging companies to move more operations overseas because they may face a smaller tax burden than in the U.S.. However, given that the foreign country probably has lower business taxes anyway, it is unlikely that this loophole would be a reason for offshoring. While it would seem that lowering or eliminating taxes would cause a decrease in revenue, the Joint Committee on Taxation, a nonpartisan score keeper for Congress, a territorial tax system could actually collect more revenue than the current system with all of its loopholes. ([16], p. 94)

Tax Loopholes Current tax law contains a series of incentives, intended or not, for corporations to offshore at least some of their operations ([17]). According to 1996 numbers from the U.S. Department of Treasury for the manufacturing sector, all these incentives have the effect of reducing the average effective tax rate that U.S. companies pay in foreign countries to 21%([18]). The Treasury calculates that the effective tax rate companies pay in the U.S. is 10% higher at 31%. One of the significant incentives is a practice called deferral. Deferral allows U.S. businesses to defer paying corporate taxes in the U.S. on profits earned overseas until the money is sent back to the U.S.. As a result, companies can indefinitely avoid paying U.S. taxes on these foreign earnings if they can demonstrate that they will be reinvested offshore. ([19])

Other tax loopholes allow companies to lower the taxes that they pay to the U.S. government by shifting profits to so called tax havens, countries that have very low taxes. Recent data shows that U.S. profits in major tax havens is increasing and that profits are not necessarily being reported where they were likely earned. ([17]) Not only do companies that use tax havens avoid taxes, they may also have an advantage when competing taxpayer money. According to a recent report by the United States General Accounting Office, "All other things being equal, a company competing for a federal contract that reported taxable income in the United States would face a higher tax cost than a competitor without taxable income." ([20])

In addition to these tax loopholes, companies can write off the costs of recruiting and training foreign workers. This saves the company money on its taxes when it seeks employees from overseas, and in effect, American taxpayers subsidize the company's activity. ([21]) There may be legitimate reasons for tax benefits related to foreign workers, but it can also be abused. Legitimate reasons may include expanding into new markets and setting up sales offices, both of which are related to actually growing revenue for the U.S. company. However, this tax benefit can become a loophole if the company is actually recruiting and training foreign workers instead of U.S. workers or as replacements for U.S. workers. In this case, it is difficult to justify why the government should

subsidize or encourage companies to hire foreign workers rather than Americans.

Tax Incentives During the 2004 U.S. Presidential campaign, Democratic running mates John Kerry and John Edwards advocated tax incentives for companies to keep jobs in the U.S. and to create new jobs in the U.S. ([22]). While this made good campaign stumping speak, as most everyone can get behind the idea of keeping jobs in the U.S. and creating new ones here, implementing policy that brings about the intended effect can be very difficult. The primary difficulty is in determining whether a job qualifies: Is it really new or did they lay off people and rehire them? Is the new job worthy of some incentive or is it just a minimum wage job? Is it even possible that this job could have been outsourced or offshored?

While there are definitely some issues that need to be resolved, the idea is not unprecedented. The New Brunswick province in Canada is currently offering six thousand Canadian dollars for every full-time position Cendant creates there, and this is on top of tax incentives provided by the Canadian government. U.S. Companies are also attracted to Canada because it is approximately 20% cheaper to do business in Canada than in the U.S., mostly because of the exchange rate. ([23])

In addition to attempting to reward companies for providing jobs, Canada and other countries also offer other tax incentives. For example, since the mid-1980s, Canada has offered an incentive program for Canadian companies that perform research and development in Canada. It is intended to encourage the development and advancement of Canadian technologies. The program, called Scientific Research & Experimental Development (SR & ED), offers tax incentives in the form of tax credits that amount to between 20% and 30% of qualified expenses. According to the Organization for Economic Co-operation and Development (OCED), the after tax cost of performing SR & ED in Canada is one of the lowest in the world, in part due to these incentives. Software development and IT companies make between 25% and 40% of all SR & ED claims. There are restrictions, though. Canada only offers these tax credits for bleeding edge development and does not give credits for routine development. ([24])

The U.S. does not have such a broad tax or other incentives program for research and development. In fact, U.S. laws and subsidies may actually discourage companies from doing new research and development in the U.S.. Changing World Technologies is currently developing the technology to turn farm and animal waste into diesel fuel and water. U.S. policy only supports fuel produced from soybeans or animal fat, and therefore, fuel from sources such as agricultural waste does not qualify for subsidies. The company's plant is currently in Carthage, Missouri, but a spokesman for the company has said it is considering moving some of its R&D to Europe or Canada, which actively support biofuel technology or have a broader definition of biofuels. If companies like Changing World Technologies are driven offshore, not only does the U.S. risk losing jobs, it also risks having to import such technologies in the future, further broadening its trade deficit. ([25])

3.2.2 Non-Wage Costs

Wage differential and corporate tax environment are not the only issues that make offshoring attractive. Other countries, especially those in developing coun-

tries, are likely to have much more lax rules about worker benefits and protection. Also, the growing Social Security and Medicare crises and taxes make U.S. workers less attractive.

Health Care Health insurance is considered a fairly standard benefit in the U.S., especially among high-paying jobs, such as those in the IT industry. As health care costs increase at double-digit percentages annually, employers are less likely to hire more people and more likely to pressure existing workers to work longer hours or to hire someone in a country where most employees do not receive health care ([16], p. 87).

Payroll Taxes While offering health insurance is technically an option, payroll taxes are not. In addition to the payroll taxes that the employees sees on his or her paycheck, their employer is also paying such taxes. These payroll taxes are usually a shock to someone receiving their first paycheck "Where did the money go". Imagine the impact to a company that pays those taxes hundreds or thousands of times each pay cycle. Todd Buchholz states that already more than 80% of families pay more in payroll taxes (including the employers share) than in income taxes!([16], p. 75) Payroll taxes that companies must pay include Social Security, Medicare, and unemployment. With Social Security and Medicare in danger of collapsing as baby-boomers retire and medical costs skyrocket, companies are not only concerned about current tax costs, they must be wary of what the future might hold ([16], p. 74).

Litigation Weather it is hot coffee, deadly cigarettes, or fattening fast food, Americans love to sue each other. While companies often face such suits from consumers, they must also consider the potential to be sued by their employees, especially when an employee is fired or let go. When a company considers hiring people in the U.S., it must not only consider the cost of employing them, it must consider the cost of potentially terminating them. Companies often offer a severance to employees in return for waiving their right to sue for wrongful termination or other reasons. In addition to this cost, companies sometimes avoid hiring permanent employees to avoid wrongful termination lawsuits. Instead they may hire temporary workers (14% to 22% more than the otherwise would according to one report) or hire in countries without such worker termination protections. There are about five hundred thousand temporary workers that have not have full-time jobs because of rigid termination rules. ([16], p.115)

3.2.3 Structure of the Market

It is important to assert that the outsourcing of IT jobs is a systemic issue; that is, there is no organization, government agency, individual or firm to blame for the growing number of jobs leaving the United States. Instead, executives of publicly-held US companies must continually find more efficient ways to earn profits. There are three pressures they face: consumer demand, threat of hostile takeover, and legal responsibilities.

Consumer Demand Living in a world with increasingly more access to information, consumers are better able to make economic decisions and, thus, a more

efficient economic system is created. In a perfectly efficient economy consumers would have perfect information as to what goods and services are available in the market and at what price. Consumers can also peruse the market for the best quality and best price of products. But, free-market theorists ascertain a search-costs problem when more information is available. As Robert Kuttner describes, "an excess amount of choice makes the consumer putty in the hands of a sophisticated marketer." ([26]) A consumer, in her everyday affairs, may not have sufficient resources or ample time to research her products, the producer of her products, or from where those products are produced. She does, however, know the price.

We know that demand for a commodity increases as the price for that commodity decreases. To capture a larger share of a competitive market, a firm must price its commodities below the cost of its competitors. A cost reduction of even two cents could capture a significantly larger share of the market for a firm over its competitors. This, however, forces firms to restructure to lower-cost operations. When the big box retail store Wal-Mart, for example, forces its vendors to cut prices a few more cents it significantly impairs the industry.

> Selling to Wal-Mart, by all accounts, is a brutal meritocracy. Manufacturers have been forced to lay off workers after Wal-Mart cancelled orders to when another vendor cut its price a few cents more. Other suppliers have shifted to low-cost operations in China and elsewhere when squeezed by Wal-Mart to cut costs further. [27]

The drive to continue reducing prices while maintaining ostensible quality to retain a strong share of the market is a pivotal force towards the direction of outsourcing.

Hostile Take-Over Corporate governance, or the manner in which a corporation is directed, is on the market. Since the 1980s, corporate governance has been heavily influenced by the financial markets threat of hostile take-over. A hostile take over occurs when another business entrepreneur, labeled a "raider," believes that a company's share price is undervalued by the stock market unnecessarily. Further, the raider asserts that she can maximize returns if only given the opportunity to run the company. The raider, then, makes an offer to buy a controlling interest of the company at a price far superior to the market price. Without resources of her own, the raider borrows investment capital from banks, with the newly-purchased corporation as collateral. The pressure, once a raider has purchased a company, intensifies as she is forced to maximize the returns on the investment. To realize such returns, a company may undergo cost-cutting cleavages.

Boards of Directors of firms view hostile take-overs as a lingering threat in the financial market. They are forced to make their company more efficient and increase the value of their stock or suffer the brutal reality of somebody else doing it. Because of this threat, firm managers are motivated to employ cost-cutting strategies to realize greater efficiency.

Legal Responsibility Managers of publicly held firms also have a legal responsibility to the firms shareholders. Firm managers have a fiduciary obligation to manage the firm in the best interest of its shareholders. For most firms this

translates into maximizing the shares for shareholders. With a growing number of pension funds and mutual funds seeking to maximize returns on short-term investments, firms have an even greater responsibility to maximize profits.

The three pressures of consumer demand, fear of hostile takeovers, and legal responsibility have forced firms to seek new ways to reduce production costs to further enhance the company's bottom line. In times of poor economic conditions in the US, those pressures are increased for firms to maintain a greater share of the consumer market while generating a larger return on short-term investments of stockholders. Outsourcing has become a valuable method to increase returns on investment as it allows companies to produce cheaper goods and services with the same quality level of American-made products. While it is true that some companies have remained committed to their social contract with society and kept production in the United States, many other companies have been forced by the three pressures of consumer demand, hostile-take over, and fiduciary responsibility to take production offshore.

3.2.4 Government Policies to Promote Outsourcing: India

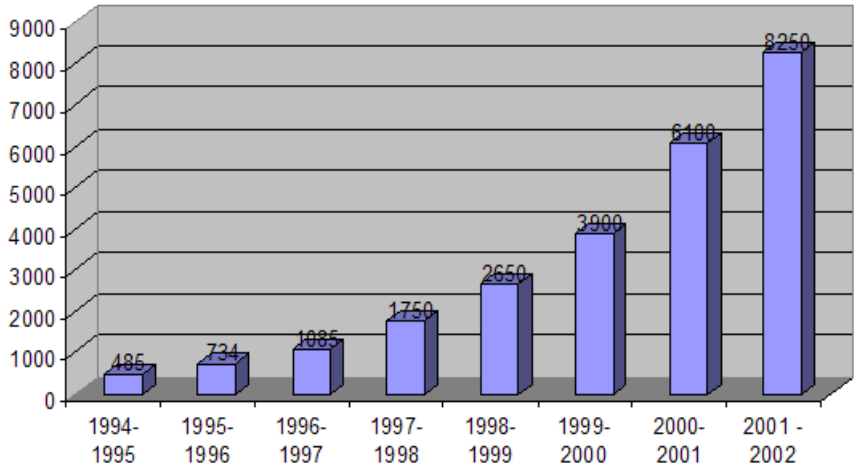

Figure 1: Growth of the software/IT Industry in India [NASSCOM]

IT Outsourcing, as a phenomenon, can be thought of as an offshoot of the upswing in globalization and boom in the computer industry that has been changing the world since the late 1970s. This led to the creation of entirely new streams of revenue for entire countries, as well as providing bountiful and gainful employment to thousands of people. In this environment, public demand forced even formerly protectionist closed countries to open up their economies. Governments of various "Third World" countries enacted a slew of measures to both liberalize their economies to attract foreign investors and provide incentives to multinationals to outsource to their countries. The following section, with a focus on India, examines and details the measures undertaken in this regard.

The Indian government, socialistic and protectionist till the early 1990s, embarked on an ambitious liberalization program in 1991 to open up the country to foreign investment and products. While the initial pace of reforms was slow, increasing openness brought large profits into the country. This led to increasing pressure to continue and even step up the pace of the reforms from India's business community in spite of resistance from some political parties and the labor unions. Consequently, despite a few hiccups, the government continued to open up the economy. Liberalization has taken root in India and the Government has steadily lowered interest rates, eased up foreign exchange trading and import restrictions, and freed banks from their social obligations. The central Indian government as well as certain state governments have realized that India has stumbled upon a gold-mine and seem determined to mine this gold. The reason for this optimism is apparent from studies of the IT industry's growth, mainly fueled by outsourcing. With such budding growth, the government decided to implement a whole series of reforms, specifically aimed at facilitating the IT industry's growth and expansion in the country.

Having recognized the potential of IT-enabled services, the Indian government has taken positive steps by providing numerous incentives to companies, MNCs and local firms alike, that want to start up a new company in an IT-related field. The Indian government recognized that Information Technology would influence economic development extensively in the future. Consequently, a major shift in policy direction resulted - with the express aim of promoting this industry in India.

Some of these policies and shifts in agenda, implemented at the national level by the Central Government, are as follows:

- It established a task force for developing a world class knowledge-based outsourcing industry allowing duty free imports of capital goods and providing tax exemption on export of IT enabled services.
- IT is regarded as among the top 5 priority industries in India. IT is now a part of the national agenda, and policies in both the Central and states governments are formed so as to obtain the maximum benefit out of IT outsourcing to India.
- Software Technology Parks (STPs) with state-of-the-art IT infrastructure and telecom facilities providing a "single window clearance" for all regulatory compliances were established all over the country. This created islands of efficiency in the country where business could proceed unimpeded by the bureaucracy.
- The new National Telecom Policy (1999) invited private participants to the Indian telecom sector. India's large business houses and Public Sector Units (PSUs) are working towards creating greater bandwidth availability. ([28]) The government monopoly on telecom is slowly being dismantled, and private players are being allowed into the nation, albeit with caps on foreign ownership.
- A separate Ministry of Information Technology was set up to expedite swift approval and implementation of IT projects and to streamline the regulatory process.

The Information Technology Bill, which was passed by the Indian Parliament in May 2000, has now been notified as the IT Act 2000. The IT Bill brings e-commerce within the purview of law and accords stringent punishments to "cyber criminals". Among other things, it provides a legal framework for the recognition of electronic contracts, prevention of computer crimes, and electronic filing of documents. With this law, India joined a select band of 12 nations that have cyber laws. ([29])

- Recognizing the importance of Venture Capital Funding, the Ministry of Information Technology has set up a National Venture Fund for the software and IT Industry with a corpus of Rs. 100 crore in association with the Small Industries Development Bank of India (SIDBI) and Industrial Development Bank of India (IDBI). The fund aims to provide Venture Capital to start-up software professionals and IT units in the small-scale sector.

- Amendments have also been proposed in the Indian Evidence Act, Indian Penal Code to introduce measures to combat cyber-crimes and introduce a framework within law to deal with such crimes.The mechanism of digital signature has been proposed to address the issues of jurisdiction, authentication, and origination.

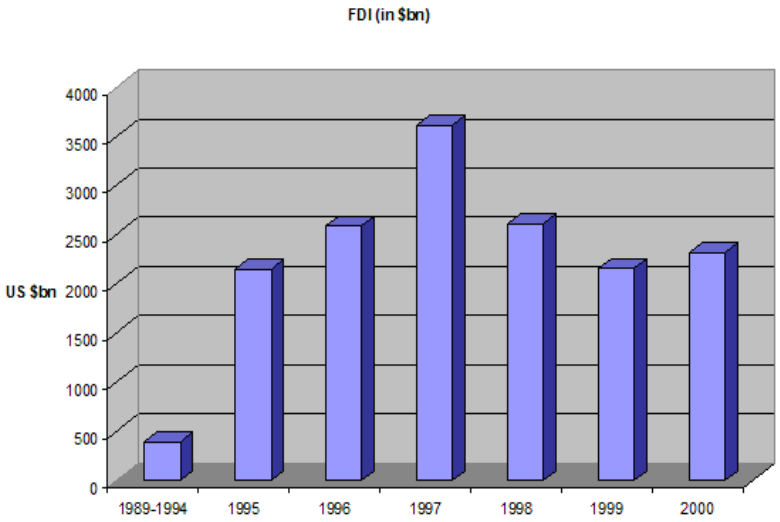

Figure 2: FDI

Liberalization and Market Deregulation The liberalization and deregulation initiatives taken by the government are aimed at supporting growth and integration with the global economy. The reforms have reduced licensing

requirements and made foreign technology accessible. The reforms have also removed restrictions on investment and made the process of investment easier. In addition, these measures implemented a growth-oriented policy that attempted to remove some of the existing procedural deterrents and anomalies that had been standing in the way of software exporting organizations. It also introduced measures to deregulate the software and ITES market even further, with the express aim of creating a world-class business environment.

These reforms have enabled the entry of foreign companies to the Indian market. Foreign Direct Investment (FDI) from non-resident Indians (NRIs), including Overseas Corporate Bodies (OCBs) owned by NRIs, are warmly welcomed in India. The investor-friendly atmosphere created by the liberalized policies of the government has resulted in huge inflows of FDI from NRIs and also made foreign technology accessible. This has resulted in a huge leap in the number of FDIs entering India. This is significant as India, even now, lags behind China and accounted for only $2.3 billion in FDI flows in 2000. Although, when compared to levels of FDI in 1989, this is still a marked improvement as seen in Figure 2. ([30])

Historically, government duties added a significant percentage to the final cost of all goods that are sold in India. For example, the cost of a TV went up by 33% when its parts were imported rather than manufactured in India. It was only when the government reduced these duties that outsourcing jobs to India – with the attendant cost of setting up new work-centers, equipment, and personnel – became affordable.([31])

Central Government Tax Incentives The Indian government, in order to attract more investors, also implemented various tax incentives to lure MNCs to India. The tax structure in India is as follows: A domestic company having its entire management and control in India is bound to pay 35.7% tax to the Central Government. A nonresident corporation has to pay 48% of the income derived in India from Indian operation; income that is accounted to arise in India and income that is received in India. Minimum Alternate Tax (MAT) is at the rate of 7.65% of book profit of the companies.([32]) As a result, it is more profitable for companies to set up shop in India since they are only taxed once on income derived and received in India.

Some of the salient tax reforms to favor the IT industry include:

- *Infrastructure:* A 10-year tax holiday to ventures engaged in developing and/or maintaining and operating an infrastructure facility.
- *Power:* A 10-year tax holiday to undertakings which generate and/or distribute power.
- *Telecom:* five-year tax holiday for companies providing telecom services, including Internet and broadband services. A 30% deduction from profits for the next five years in any 10 continuous years out of first 10 years is also offered.
- *Industrial Parks and Special Economic Zones:* A 10-year tax holiday is applicable to ventures that develop, operate, and/or maintain in notified IT parks and special economic zones.

- *Incentives for Exports:* Tax is deducted on exporters' profits for any unit set up on STPs, EPZs, and SEZs. In addition, the following indirect tax benefits are available to ITES units established under STP/SEZ units:
  - Customs duty is applicable on the import of goods into India. STP/SEZ units can import specified goods, including capital goods required by the units for their activities, duty-free. Second hand capital goods (except laptops and PCs) may also be imported duty-free. Accordingly, goods such as computers, peripherals, laptops, servers, networking equipment, video projection system, storage medium (such as floppies, CDs, and data tapes), office equipment (such as facsimiles, copiers, telephone systems, and modular furniture) can be imported into India by such units without payment of customs duty.
  - Reimbursement of Central Sales Tax (CST) paid on goods procured within India can be claimed, subject to conditions, though it may be difficult for a service unit to avail this benefit.
  - Duty-free goods are required to be used within the unit (i.e. the area bonded by the Customs authorities). Exemptions may be possible by following prescribed procedures and obtaining necessary approvals, depending on the need and the circumstances.
  - Other incentives include tax concessions for FTI and a weighted deduction of 150% for scientific research and development expenditure. Also, there is a 10-year tax holiday available for R&D companies engaged in scientific and industrial research.
- *Other Incentives:* Tax concessions are allowed for FTI and a weighted deduction of 150% for scientific research and development expenditure have been offered. The 10-year tax holiday is available for R&D companies engaged in scientific and industrial research.

State-Level Incentives Individual Indian state governments, taking their cue from the enormous economic benefits that accrued to Bangalore because of outsourcing, have taken significant steps to boost the growth of the ITES/BPO industry within their domains. ([33]) These include the following:

- State Governments have announced IT policies that seek to create (through focused Human Resources Development (HRD) programs), a trained pool of manpower with the skills and aptitudes appropriate for the ITES industry requirements. Bridge programs, such as communicative English, soft skills, accent neutralization, and ITES sub-domain level training, for engineering graduates have been given focused attention by the state governments. These programs have been woven into the mainstream collegiate education system, including continuing education programs. Taking a long-term perspective, most of the states are providing a special thrust to spoken and written English right at the school level.
- The "IT Industry Employment Promotion Scheme" has been introduced at the state level. It is a direct, simple-to-participate-in incentive creating a win-win situation for both the government and the industry.

- Most of the states in India have Software Technology Parks (STPs) and Export Processing Zones (EPZs) offering world-class infrastructure with reliable data communication facilities. Further, to leverage private sector investments, the state governments have pro-actively come out with several special incentives:
  - Special tax incentives
  - Rebates on cost of land
  - Rebates on stamp duty on sale/lease of land
  - Concessions in power tariff for new units
  - Self-certification under various acts
  - Special incentive packages for mega projects (> US$ 10 million)
- Providing state-level statutory clearances within specified time frames after the project is sanctioned in favor of the developer and also automatically granting non-statutory state level clearances.
- Providing government-owned land at concessional lease charges for projects where ownership would revert to the government within a maximum period of 33 years from the start date of the lease.
- A 50% Rebate on registration and transfer of property charges and exemption from stamp duty for sale/lease of built-up space.
- A majority of the states have either promulgated a government order or a notification permitting all establishments in the respective jurisdictions engaged in IT-enabled services (including call centers) to work on National Holidays, allow women to work in night shifts, and function 24 hours a day year-round.This includes amending the Shops and Establishments Act to make it more suitable for ITES companies. This allows ITES companies to:
  - Employ women and young persons (between the ages of 18 and 21) during the night shift, subject to provision of adequate security and transport.
  - Have 'flexi-timing' by asking an employee to work for more than eight hours a day, without exerting an additional financial burden on the companies, in terms of overtime payments, as long as the statutory requirement on the maximum weekly working hours, 48 hours, is respected.
  - Operate 24 hours a day.
  - Operate 365 days a year.
  - Reduce the procedures involved in retrenching employees, if certain conditions are satisfied.

  These measures assume significance in light of the fact that, traditionally, Indian companies and factories have had to follow strict labor laws on hours of work and employment. Failure to comply usually results in strict fines or long-drawn out court battles. Granting such freedoms to

companies was another step towards replicating, or approaching, Western conditions of work and employment - crucial to attracting clientele from the West.

- Eligible to purchase land or ready-to-move office space at a rebate of Rs. 20,000 per job created.
- 100% exemption in Stamp Duty to all IT & ITES units in public IT Parks. 75% exemption in Stamp Duty to all IT & ITES units in private IT Parks. 100% exemption in Stamp Duty to all IT and ITES units in 'C', 'D', 'D+' and No Industry District areas as per Package Scheme of Incentives, 2001. 90% exemption in Stamp Duty payment for mergers, de-mergers and reconstruction of IT & ITES units all over the State.Stamp Duty exemption also to non-IT entities such as leasing and financial institutions acquiring space/premises in private and public IT Parks for subsequent leasing to IT and ITES units.
- Applicability of all relaxations under the Industrial Disputes Act and Contract Labor Act to all IT and ITES units in the State on par with Special Economic Zones.
- Exemption of IT&ITES units from clearances of State Pollution Control Boards.

Drawbacks of the Indian Outsourcing Industry In spite of all these measures, some of which are too recent to have had much effect, India is seeing an erosion of business from outsourcing, mainly due to the following reasons:

- *Competition from other low-cost outsourcing destinations:* India was not the only country to realize the huge profits to be gained from providing cheap outsourcing alternatives to the outside world. A host of other countries followed India's lead and are now directly competing with India for a share of the outsourcing market. India is still the leader, by far, accounting for over 80% of the market - but with increasing profitability has come escalating costs. This has made India, in spite of all its advantages, seem a less attractive destination as compared to the Philippines for example.
- *Public backlash against outsourcing in the U.S. and European Union:* Although outsourcing improves a company's bottom line and increases profitability, it is at the cost of hundreds of jobs being eliminated in the domestic market in favor of cheaper alternatives in the outsourcee countries. This has led to various movements to mobilize public opinion against this practice in both the US and the EU, forcing even the national governments in these countries to introduce legislation to limit outsourcing, at least the government-related part.
- *Quality concerns with some of the BPO companies leading to a relocation back to their home countries:* One of the main categories of jobs outsourced are customer support positions which require communication and language skills. While English language skills in India are fairly advanced, problems in mastering accents and responding to American regional concerns, rather than any actual problems of quality, have led to a popular perception that quality suffers when jobs are outsourced.

- *Poor infrastructure and lack of visionary development:* India's traditional bugbear - lack of visionary governance - threatens to rob it of its dominant position in the IT offshoring industry. Coupled with an almost total apathy towards developing sophisticated infrastructure, this has led to India falling constantly behind other competitors like China and an associated erosion of its dominance in the field. If measures , like developing First-World-like infrastructure and reducing bureaucratic red tape, are not implemented soon, India will cease to be a major player in this industry.

An important point to note here is that the incentives provided by the government, while initially helping the industries, have resulted in an unnecessary loss of revenue for the government as the industry has grown. This is because companies which outsource would do it anyway irrespective of the fringe benefits provided (and that is all most of these measures amount to, except for the tax holidays). The lost revenue could have been channeled into developing better infrastructure in the country or even improving the knowledge infrastructure further.

While we have mostly discussed Government initiatives in India's context, similar trends can be seen all across south-east Asia. The Philippines government, in a bid to attract business from the US, has followed suit and provided substantial tax breaks to companies setting up office in their country. It has also passed an Intellectual Property Rights Law akin to the Indian IT Act, 2000. A separate council – the Information Technology and E-Commerce Council – was set up to promote investment n the Philippines IT sector ([34]). Malaysia and other Pacific Rim countries, along with China, have followed suit and passed a slew of similar measures to attract IT outsourcing business to their economies.

3.3 R&D Outsourcing: A Growing Trend

During the last decade, the globalization phenomenon has slowly, but steadily, come to dominate the business processes and strategies of companies around the globe. In addition to resulting in the spread of technology and trade, Globalization has also resulted in the 'globalization of technology'. As examined in *Globalization and Technology*, this process proceeds in three stages ([35]):

1. International exploitation of domestically produced goods.
2. Global innovation generation – focusing on innovations generated under a single proprietor across the globe.
3. Collaborations - where both the proprietor/domestic company and the foreign company collaborate on the production and marketing of innovations.

The traditional focus of outsourcing has been, at most, on a slight variation of the first factor (promotion of the home company's business in a foreign country)- with outsourcing helping to increase the companies' profits and promote business, both abroad and at home. This trend, though, is slowly changing. An increasing number of companies are opting to shift their R&D centers to offshore locations – both as a result of new collaborations and in order to capitalize on the abundant, skilled, and cheap human capital in developing countries. Some of the possible reasons for this include ([35]):

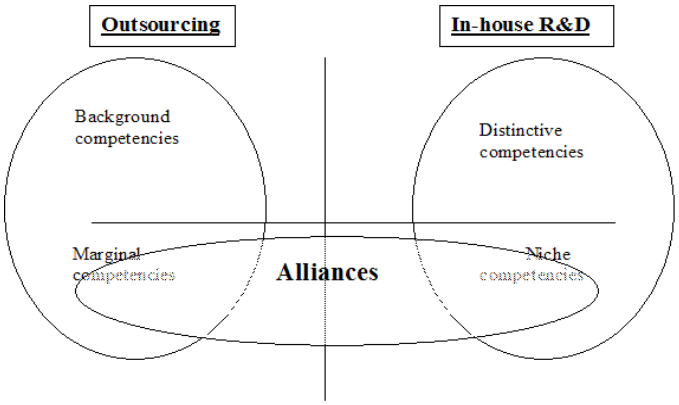

Figure 3: R&D Quadrants

- The pressure to innovate and master multiple technologies applies to firms of all sizes. Faced with the option of supporting skilled but scarce and costly researchers at home or cheap, abundant, and skilled researchers abroad, firms, especially those in the medium- and small-size segments, are increasingly opting for offshore centers of development.
- Offshore centers, being cheaper, offer the firms an opportunity to have access to capabilities they might not be able to normally afford or even have a higher-than-industry-average R&D budget with greater results.
- Firms also decide on offshore relocation of their R&D facilities on purely strategic rationale – to tap into or establish a presence in "emerging" markets. In other words, to have a proximity to fast-growing and future markets.
- The advantages, especially in countries from the Far East and South Asia, of being able to implement follow-the-sun schedules of work which greatly enhance productivity. As Figure 3 illustrates, most outsourcing in the R&D sector is mainly in the fields of background competencies of the company's skill set (for example, PCB manufacture in the computer hardware industry), which represent areas where firms can benefit from changes in the supply chain. This is followed by alliances in sectors of marginal and niche competencies, which indicate the areas identified as growth areas of the future and those in which the company has, at present, low expertise. Thus, there is ample scope for the growth of R&D outsourcing especially given that most R&D is characterized by proximity to target markets and that the developing countries form the target markets of the future.

Outsourcing is thus a phenomenon that is here to stay, and falling back on protectionist measures is a surefire way of losing competitiveness in the global market. In order to compete with the slew of measures discussed in the preceding section, the government should concentrate on developing an effective knowledge

infrastructure to meet industry's demands and provide cost-effective alternatives to outsourcing . This kind of non-interventionist policy will not only galvanize domestic industry without resorting to the crutches of protectionism but also ensure the training and creation of a pool of skilled human capital to take advantage of further advances in the industry and technology, thus assuring a near-permanent advantage.

3.4 Tug-of-War

There is a fundamental tension on the subject matter of outsourcing between the public, corporations, and the government. One might question whether businesses should be ethical or profitable (economically efficient). However, society expects them to be both at the same time – it wants businesses to maintain high economic growth as well as high ethical standards. A profitable company acts ethically towards its stake holders, but a non-ethical company risks losing the public support needed to be both credible and successful. ([36])

This clash of interests is more fundamental and deep rooted than it seems. It is essentially capitalism versus socialism in disguise – the government needs to keep the capitalists happy because they bring in the money and drive the economy, but it needs to keep the people happy because, after all, thats what governance is about.

A classic example of this conflict of interests between industry and society is the issue on work visas. The next section briefly discusses the issues involved in the context of these conflicts just mentioned. A related, although broader, issue is that of immigration in general – should a country evaluate immigrants in terms of their value to the economy? We also discuss this issue in the subsequent sections.

3.4.1 Work Visas

"The H-1B is a non-immigrant classification used by an alien who will be employed temporarily in a specialty occupation or as a fashion model of distinguished merit and ability." ([37])

Amidst all this IT and outsourcing frenzy, there is yet another burning issue that has caught the attention of the IT industry – the cap on the number of foreign skilled workers allowed inside the United States each year. The Immigration and Nationality Act (INA) as amended by the Immigration Act of 1990 (IMMACT) had specified that the Immigration and Naturalization Service (INS) may not approve more than 65,000 H-1B applications per fiscal year ([38]).

However, beginning in the 1990s, this cap began filling up long before the end of the fiscal year. Sensing the increasing demand for more skilled work force, the industry began pushing for a bill to raise the H-1B visa cap. In a hearing in front of the senate ([39]), several representatives from across the industry (Microsoft, Sun, Cypress, AND Texas Instruments among others) testified with facts and figures to justify the need for a higher visa cap. Some of the statements in the hearing stated quite simply that if the cap was not raised, the industry would have no choice, but to outsource.

The committee came to the conclusion that the shortage of skilled workers was a problem deep rooted in the American education system, but also that

some short term interim measure was needed to ride the wave of economic growth at the time. Therefore, it was decided to raise the visa cap to 195,000. At the same time, the committee recognized the following problems with the H-1B visa program:

- Employers do not always employ the "best and the brightest" but rather entry level workers. The education and skill requirements for H-1B were quite low.
- The law did not require any test for availability of qualified U.S. workers, thereby allowing employees to hire for reasons other than skill shortage (like cutting costs)
- The law at that time allowed employers to lay off U.S. workers and replace them with H-1B workers
- The law allowed H-1B workers to be retained for up to 6 years for a supposedly temporary requirement.

There was a lot of discussion on what policies to instate to prevent the "abuse" of the program – the problems with H-1B were already evident at the time the cap was raised. Several measures were suggested to deal with these problems, including equal pay for H-1B workers (so that cost savings does not remain an incentive), stricter probing into companies' applications, a per country cap on the number of issued visas, higher educational requirements ([40]). However, none of these suggestions really came into effect, mostly because bulk applications from companies were seldom scrutinized closely ([39]). Gradually, many companies started relying more and more on H-1B workers to fulfill their requirements.

In the years that followed, companies brought in H-1B workers in large numbers, often at the cost of American workers. Many of the Indian software giants, such as Wipro, Infosys and Satyam, – who are also major players in the IT outsourcing game – might very well fall under the category of "H-1B dependent" employers (employers with at least 51 employees are classified as H-1B dependent if 15% or more of their workers are holders of H-1B) [41] After much public backlash and criticism, the H-1B visa program was revised again to bring the cap back down to 65,000 starting October 1, 2003.

However, the status quo could not last for long. The quota of 65,000 for 2004 was reached the very first day the allocations opened. ([42, 43]) The IT industry made demands to raise the cap yet again, and on November 20th, 2004, the United States Congress passed a new legislative measure to provide an additional 20,000 H-1B work visas. This is part of the $388 billion Omnibus Appropriations Bill that was passed by Congress late on a Saturday night. It is expected to be signed into law by President George W. Bush in the next few days. ([44])

The additional 20,000 visas will be reserved for International Students in American universities with master's or doctorate degrees. The proposed H-1B visas for up to 20,000 eligible foreign students will be treated as an 'exemption' from the current cap of 65,000. The measure, preceded by months of hectic lobbying by U.S. industry, will benefit thousands of International students who are either waiting on American campuses or back at home. ([45])

The signals the government is trying to give with this new legislation are mixed. On the one hand, it has bent to the demands of the IT industry, while on the other hand, it is modestly trying to protect public interest by instating new policy measures and requirements to prevent the abuse of the H-1B program. Only time will tell whether these policies are successful in their mission. Now, however, there is continuous tussle between the public and the corporate world with the balance shifting back and forth. Perhaps there are lessons to be learned here that can be applied to policy on outsourcing as well because the tussle is similar there.

3.4.2 Immigration

Currently, the U.S. immigration policy ignores the potential value to the economy of an immigration applicant. The U.S. government does not question whether someone is likely to benefit the economy or become a burden for existing and future citizens to bear. In general, the U.S. does not favor those with useful (or high-tech) skills or those with advanced education as many other countries do.

In an aggressively competitive global market, the U.S. cannot afford to ignore the impact of its immigrants. This is not to say that those without a proven benefit to the economy should not be admitted, but the U.S. could certainly do a better job of admitting higher proportions of immigrants who are likely to help the economy. It is one thing to be the Land of the Free and welcome immigrants with open arms, but doing so at a significant expense to the economy is quite another thing.

In addition, the U.S. immigration policy already plays favorites. First, people from some countries, such as the United Kingdom and Mexico, are given special consideration in the U.S. immigration quotas while the rest of the world is left to compete for the rest of the slots. A persons ability to contribute to the economy should be just as important as the country from which they might have come. U.S. immigration policy also prefers people that already have relatives in the U.S. Approximately 75% of U.S. immigrants arrive under the family reunification principle ([16], p. 23) while only about 10% are admitted under skilled worker provisions. According to Todd Buchholz, former White House director of economic policy, the family reunification policy has led to: chain migrations, older immigrant population, more burdens on the welfare state, and highly concentrated enclaves of immigrants from the same country. ([16], p. 44)

Consider two people, both from the same country. Person A is thirty years old and has a PhD in computer science. Person B is seventy year old, retired, collecting government assistance, and has a child who is a U.S. citizen currently living in the U.S.. As backwards as it may seem, under current U.S. immigration policy, Person B may be more likely to be permitted to immigrate to the United States. This is despite that fact that Person A has a lot to contribute to the economy for many years to come while Person B may need public assistance or Supplemental Security Income.

In fact, the typical immigrant is older than the typical U.S. native and the proportion of immigrants older than sixty-five is greater than proportion of U.S. population. Furthermore, immigrants older than sixty-five are twice as likely as natives to depend on Supplemental Security Income. ([16], p. 35)

The source of such burden is not limited to elderly immigrants. A National

Research Council study estimated that while the net value of an immigrant with more than a high school education is $198,000 the net fiscal impact of an immigrant with less than a high school education is –$13,000 ([46]). Based on this data, admitting 100,000 college grads rather than high school dropouts would generate twenty-one billion dollars over their lifetimes ([16], 25). In addition, unskilled immigrant are estimated to drive down wages by between one and three percentage points ([16], p. 36)

Student visa policies are similarly backwards. The policies that regulate them are not looking to help the U.S. economy and may in fact hurt the economy and its workers. Rather than focusing on finding the brightest people and training them to work in our economy, the U.S. identifies people that it is certain will leave when their visa or student status expires so that there is a good chance that they will not remain in the U.S. ([16], p. 27). Current U.S. student visa policy attracts presumably smart people, expands their minds, and then kicks them out of the U.S. to go work in their home countries. Not only did these students take up a spot in the limited U.S. education system, but they are now going compete against U.S. workers whether directly or indirectly through the world economy. Graduates that arrived under student visas return to their native country return smart, fluent, and familiar with U.S. culture; in other words, perfectly suited to take an outsourced job ([16], p. 27).

On the other side of the immigration policy coin, Canada welcomes skilled workers to settle permanently in Canada. The Citizenship and Immigration Canada (CIC) departments has a specific area on its website devoted to welcome and attract skilled workers wishing to immigrate to Canada. It even states that Applying to come to Canada as a Skilled Worker is not difficult. ([47]) The CIC even has a a page that explains how points are awarded when determining whether to admit a skilled worker. A Masters or Ph.D. will give you one-third the points required. other factors, such as arranged employment, age, and experience, are also considered when awarding points. ([47]) Also on its website, the CIC lists admits immigrants, foreign students, visitors and temporary workers who enhance Canadas social and economic growth as one of the four things it does ([48]). On its site, the U.S. Citizenship and Immigration Services (USCIS) says that it processes Family-based petitions and Employment-based petitions for employees to immigrate or stay in the U.S. temporarily ([49]). Based on these statements from the governments themselves, it seems that one is committed to its economy while the other seems to have no clear objective. What is clear, however, is that the Canada is competing with other countries for skilled immigrants while the U.S. is only offering short term solutions and outdated policies ([16], p. 43).

Some scholars might wonder how many students are in top American engineering programs. Usually, universities might publish which countries are represented but the data is useless since researchers are unaware of exactly which undergraduate colleges are the major feeders. In a sense, the raw total is not as important as the broken down totals. Finally, some valuable statistics are available. Stuart Schimler, using the Freedom of Information Act, has acquired statistics on undergraduate feeder schools to some of the nation's finest engineering programs. The result is somewhat surprising: some foreign universities, despite geographic hurdles, often send more students to America's graduate universities. The most complete data was taken from the Georgia Institute of Technology, which supplied their entire enrollment for 2003. In that year,

here were some of the leading foreign universities represented, and how many students were enrolled: Tsinghua University (61), Seoul National University (52) Ecole Nat Sup D'Arts (48), Indian Institute of Tech-Madras (44), Indian Institute of Tech-Kharagpur (34), Middle East Techl University (43), Yonsei University (37), Hanyang University (35), Korea University (31), Bogazici University (22) Chulalongkorn University (22), The leading American University feeders were: Georgia Tech (422), University of Florida (35), Virginia Tech (26), Rensselaer Polytechnic (28), University of Michigan (27), North Carolina State (23), Purdue (22), University of California at Berkeley (21), and MIT (21). The numbers demonstrate that foreign universities are sending a great deal of students to Georgia Tech. These numbers, though, are not unique to this one institution. For the year 2003, in terms of new admits, the University of California at Berkeley sent 82 students to its own graduate school and was followed by a few other American Universities. Within the top 15 feeders though, it is noticeable that Seoul National University sent ten students – the same numbers as MIT. These numbers tell us that American Universities attract many capable, qualified workers that will be more productive than those brought into the country based on family reunification.

4 Future

4.1 The Winning Horse

According to a Forrester survey ([50]), "3.3 million U.S. service industry jobs and $136 billion in wages will move offshore to countries like India, Russia, China, and the Philippines. The IT industry will lead the initial overseas exodus." J. Bradford deLong, Professor of Economics at Berkeley believes that we have mere witnessed the tip of the iceberg that is outsourcing, and the real size of the phenomenon will be revealed in the next 10-15 years. Given this data, the history of outsourcing and the sound economic theory of comparative advantage behind the outsourcing model, one is tempted to say that outsourcing is, in fact, inevitable. As firms who are already enjoying the benefits of outsourcing cut costs further, competitors in the U.S. and elsewhere will be forced to follow suit.

To some, this may be bad news, but these fears might be exaggerated. In his 1930s book *Men and Machines*, writer Stuart Chase says "Has the machine in its last furious manifestation begun to eliminate workers faster than new tasks can be found for them?" ([51]). This same fear of "elimination of jobs" currently grips the United States and other developed countries of Europe. However, as articulated in a recent *Economist* article ([52]), "What the worriers always forget is that the same changes in production technology that destroy jobs also create new ones." NASSCOM reports that the Indian IT sector employs less than a tenth of the total number of employees in the IT sector, and that for every $1 invested in India via offshoring, the American economy gains $1.14 in direct and indirect benefits ([53]).

Indeed, from an end-to-end perspective, one might view the effects of outsourcing as akin to the effects of mechanization. As with mechanization, it is reasonable to expect that in the long run, repetitive, rule-based, run of the mill, commodity services are the ones most likely to be outsourced since the economies of scale favor such tasks. The bulk of the jobs outsourced today

already fall under this category. Further, cutting costs makes companies more profitable and lowers prices, lifting up the demands for new goods and services, thus creating new jobs.

Here is another way to look at this (adopted from [52]): let us broadly classify the various job functions in the IT industry as follows. At the bottom-most layer are the standardized services (credit card processing, tech support, call center services) that been commoditized. The top layer is the other end of the spectrum – offering specialized, customized IT services for high valued customers – the market is small, but the payoffs are big, there are no standards, and domain knowledge is used extensively. Since these services are tailored to the needs of customers, it makes more sense to locate them close to the consumers – the bulk of which are in America and Europe.

Which leaves behind the middle layer – this is made up of services that are on their way to being commoditized, as the industry creates and adopts new standards. The bulk of today's outsourcing is happening in the bottom (call centers and the BPO sector) and middle (firms such as TCS and Infosys) layers. As more jobs shift down to the lower layers, more intellectual power is freed to innovate and create newer value added services in the top layer.

There are also good reasons ([52]) to believe that it is perhaps impossible to get rid of all uncertainty regarding future jobs, simply because many of these jobs will be created in industries that have not been thought of yet, for products that have not yet been invented, and in services that have not yet been called for. History has shown us time and again that not all predictions, even short term, can be relied upon in an industry as volatile as IT and a market as dynamically evolving as the global economy of today.

The survey presented in [52] argues that "although the opportunity to source large amounts of white-collar work from low-cost countries has arisen quite suddenly, the work will in fact move over gradually. This will give rich economies time to adjust to new patterns of work, and should keep the politics of change manageable." Thus, by formulating policies that help this transformation, we can ease into a new era of outsourcing and make this a win-win situation for everyone – rich economies reap economic benefits from the cost savings of outsourcing while creating more value, money, and jobs for the developing economies and at the same time freeing up valuable human resource to focus on innovation and new services.

4.2 Shaping the Future

As a result of the previously mentioned measures to promote outsourcing passed by various governments across the world, the competition to attract new outsourcing business has increased and blown the field wide open – with new countries entering the market every year from all over the world. IT outsourcing is thus no flash in the pan – it is definitely here to stay. As seen from its increasing investments in offshore centers, the corporate sector has taken this to heart and is banking on outsourcing in a big way. In such a scenario, it would be a step backwards for developed countries like the United Kingdom and United States to enact laws limiting outsourcing and penalizing it.

As an Accenture survey of government officials in five developed countries showed, officials in these governments felt that outsourcing rated, on average, four or higher on a scale of one to five as crucial to improve the government's

efficiency ([54]). The implication, therefore, is that these governments "hands are tied to ensure that their citizens" jobs are not sacrificed to streamline operations. While this might seem like a no-win situation, the government can try to mitigate the opposition by only outsourcing jobs which truly improve efficiency and by ensuring that the tax dollars saved from outsourcing are used to generate new jobs for their citizens back home. This is a difficult task, especially with the short terms of political offices and narrow victory margins of many elections in recent times. However, in order to not be saddled with a protectionist economy that might collapse at the slightest hint of strain, these are painful measures that need to be implemented.

In the private sector, though, it is an entirely different matter – some governments may actually be justified in imposing penalties or restrictions on the outsourcing of jobs. Possible reasons include protecting national security or even, within reasonable limits, preserving and maintaining a competitive edge in world markets. The private sector and the government will have to, with input from workers, arrive at some sort of compromise regarding both the quantity and quality of jobs that are allowed to be outsourced. This kind of negotiated compromise may initially tend to be biased against outsourcing, but market pressures and falling profit margins will force both sides, the government and the private sector, to acknowledge ground realities and engage in realistic and productive outsourcing. On the flip side, the incentives provided by many developing countries' governments to attract investors have, for the most part, failed to fulfill their intended purpose. In other words, the investors who would have invested in the country would have come anyway, and the governments have given up on valuable income which could better be channeled to infrastructure development.

At the end, the level to which governments can intervene or the extent to which it is desirable to do so varies considerably. Conventional wisdom today ([35]) points to a balance between an "interventionist" role where governments pick 'winners' and a role where the government seeks to overcome market failures and imperfections to establish a perfect ecology for outsourcing. Thus, rather than have an active government policy that is blatantly pro- or anti-outsourcing, a hands-off approach would be preferable. This would imply intervention only to safeguard the interests of national security and local markets with the government acting in the background to improve infrastructure, both physical and knowledge, and to deter excessive offshoring of jobs or at least to encourage creation of new jobs to replace those that were outsourced. This would allow countries to ride the tide of outsourcing without falling back on short-term protectionist measures. Also, with the creation of new jobs and investments in the knowledge infrastructure, new markets can be created and nurtured to provide viable alternatives to outsourcing.

In the rest of this section, we propose some specific policy recommendations in various areas to this effect.

4.2.1 H-1B Visas and Skilled Workers

Phase out H-1B visas and award points to immigration applicants that have valuable or desirable skills, work experience, and/or education. Eliminating the H-1B visa eliminates employer control over the temporary worker and the subsequent potential for employer abuse. If everyone has an equal employment

status (either citizen, green card, or permanent resident), employers will not have the motive to underpay a certain group (as they may with temporary workers) or to hire one group over the other.

Giving preference to immigration applicants that have desirable skills, such as those in the IT field, would alleviate a potential shortage of IT workers caused by the elimination of the H-1B visa. In addition, when combined with preferences for highly educated individuals, it would strengthen the U.S. economy by bringing in individuals that have the potential to make a greater positive impact to the economy. Such immigration reform would also address other issues with the current immigration system that negatively impact the U.S. economy. These issues include an older immigration population that is more likely to need public assistance([16], p. 35).

In addition, bringing skilled workers to the U.S. as permanent immigrants will help the U.S. economy in the long run rather than creating ideal offshore employees. With H-1B and other work visas, the worker must leave the U.S. after a specified number of years in the U.S. as discussed earlier.

As with all foreign worker laws, safeguards would need to be put in place to make sure that existing American workers do not lose jobs, do not see depressed wages, and are not disadvantaged. This could include limitations on the number of immigrants admitted based on skills, work experience, and education points. This limitation and the number of points could also be adjusted based on the health of the U.S. economy. In his book *Bringing the Jobs Home*, Todd Buchholz proposes cutting back the total number of entrants by 10% for each percentage point rise in the unemployment rate to alleviate worries about job displacement([16], p. 44).

In addition, the policy would have to be carefully developed to account for the actual quality of education that is being used to gain preferential consideration. Not all colleges and universities, and not even all programs within a given university are equal.

In India for example, inferior private technical institutes and management schools have sprung up since the deregulation of higher education in the 1990s. The tuition at these institutes is approximately three times that of the elite state institutions, yet they often produce poorer quality graduates. While there are about 90,000 graduates from Indian business schools each year, everyone fights for the top five percent from the six state-run institutes. As one state-sector professor said, "I'm afraid to say that for some of the private business schools it is two classrooms, 25 desktops, four faculty members, 600 books and you're away." ([52])

To raise the number of immigrants admitted to the U.S. based on desired skills or education without increasing the total number of immigrants admitted annually, other groups of immigrants must be reduced. The most obvious group to reduce is the largest, family reunification. While some call for the outright elimination of this policy, such a measure is unlikely to pass. Thus, we recommend that the endless string of paper dolls caused by the family reunification policy ([16], p. 44) be broken by applying family reunification principle only one layer deep. That is, someone who immigrated under another immigration provision may sponsor his or her immediate family under family reunification, but anyone who immigrated under this policy may not themselves sponsor someone under the same policy. Other adjustments to the family reunification policy could also reduce the total number of immigrants admitted under it and the

overall impact on the U.S. economy. Examples include determining whether family members will require public assistance, requiring a specified (possibly variable based on age or other conditions) number of years worked in the U.S., and limits on the total number of immigrants admitted through family reunification. As an added benefit, reducing the impact of family reunification may increase diversity in the U.S. ([16], p. 44).

4.2.2 Higher Education and Student Visas

We also recommend reforms of student visas so that the government does not force new highly trained graduates out of the country. If the U.S. is going to allow foreign students to occupy slots in American universities, it should at least take advantage of this brain pool. This is especially important for graduate degrees since only 50% to 60% of graduate degrees in high-tech areas are issued to Americans([16], p. 29). Therefore, we propose that graduating foreign students earning degrees in high-tech areas be allowed to compete for a limited number of permanent immigration slots. This would allow the U.S. to permanently add some of the top foreign students to its workforce. In addition to gaining these top students, allowing them to work in the U.S. would prevent them from bringing their talent to companies in other countries, possibly for companies doing outsourced work for U.S. companies.

4.2.3 Displaced American Workers

With all of the issues surrounding visas, immigration, and taxes, sometimes there is a lack of concern for displaced American workers. It is necessary for the government to provide monetary benefits, in the form of scholarships and fellowships, for Americans that are displaced by foreign workers. This is a necessary step to ensure that Americans continue to support the correct policies that are beneficial to the country's economic well-being. A potential backlash from unemployed Americans can be exploited by maverick politicians that are concerned with personal gain. It is for that reason that Americans must be able to apply for special benefits that they can use to be retrained to work in new industries or start their own businesses.

4.2.4 Taxes

Congress and other policymakers should reform tax laws so that they are not putting America and American workers at a disadvantage in the global economy. Congress should start by eliminating deferral and other tax loopholes or incentives for companies to move operations offshore.

4.2.5 Education

The most important economic and strategic driver behind global outsourcing is the ready availability of substantial numbers of skilled professionals in other countries who are willing and able to work for much less than their counterparts in the United States. It is therefore essential that the government take urgent steps to remedy this shortage of skilled personnel in the country. Thus, it is not only essential to create great physical infrastructure to promote industries to invest or remain, it is also crucial to have an effective knowledge infrastructure

in place that can meet the demands of industry without having to resort to offshore talent or skills.

Another public policy proposal we present is more broad and has a longer-term scope. While we are already watching IT jobs leave the United States, outsourcing will have the greatest impact on IT jobs in 10 to 15 years and beyond. The structural change to the economy will not only affect IT workers, but also those with whom IT workers work. That is, service industry employees will also be affected via a trickle-down effect. With a long-term perspective on outsourcing, it becomes increasingly clear that the best public policy response is not a simple attempt to stifle outsourcing but to accept it. We must realize that outsourcing is inevitable. However, the overall effect outsourcing has on the American workforce is inevitable. The United States has always been a country of Innovators. True to form, the US government must implement education programs that make Americans better innovators.

In his book *Work of Nations*, Robert Reich describes a new type of employee, "Creative Symbolic Analysts." These Symbolic Analysts, he believes, will be the predominant careers of Americans. They will be charged with the task to innovate with things (creating new software for example) and innovators with needs (creating new services that will delight people). Put in an economic sense, the productivity of America will increasingly rely on the ability to create 'blue-sky' innovations. That is, Americans will be more employed with creating both the product and the desire for the product. To do this, Americans must be more creative. Educational training must include a strong arts program in K-12, state-of-the art technologies, and intensive language programs. Classroom discussions must facilitate active group participation, brainstorming activities, and adaptability. Simply put, American education must veer from textbook indoctrination and standardized tests and create a marriage between intellectual curiosity and innovation.

5 Conclusion

Outsourcing is now a global phenomenon, and it is here to stay. Governments should recognize this reality and, instead of legislating directly against it, take measures to prevent needless outsourcing of jobs and develop an effective knowledge infrastructure. This would help retain an edge in innovation and help foster the incubation of new industries and would offset any jobs lost through outsourcing. A well-established knowledge infrastructure would also be useful in retraining laid-off workers and reduce public backlash. This would involve significantly upgrading the educational system to train and equip people to take technical jobs in industry. In the long run, we expect that the bulk of outsourcing will happen slowly, thus allowing industries to adjust and react to the new business models. The Government, for its part, should ensure that this transformation happens smoothly.

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