

Abstract

This thesis investigates the offshore outsourcing phenomenon and tries to build a solid foundation on which further studies can be based on. Research from such websites as the McKinsey Quarterly website <http://www.mckinseyquarterly.com> and the CIO website <http://www.cio.com> are used to depict not only the potentially huge profits that can be made due to wage differentials, but also some of the easily forgotten additional costs that comes with the territory, which can cause firms serious headaches in their offshore outsourcing endeavors. Theory from the fields of industrial organization, microeconomics and labor economics are later used to analyze these hidden costs from a theoretical perspective, hopefully giving the reader better insight into the very complex nature of the decision to outsourcing individual functions or entire processes to a low wage country such as India.

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“Outsourcing is just a new way of doing international trade,”
/ N. Gregory Mankiw, the former Chairman of President George W. Bush’s Council of
Economic Advisers

Introduction

1.1 Offshore Outsourcing

There are obvious advantages with using workers from India, who make 2 \$ an hour, compared to their western counterparts, who make ten times that amount. This wage-differential has of course been the main incentive for manufacturing companies to move their production from the western hemisphere to low-wage countries, such as India and China. Outsourcing production to a low-wage country is what is called offshore outsourcing. (Agrawal, 2005 (1))¹

This has been going on for decades. So what is it that caused Senator John Kerry to accuse the Bush administration of wanting “to ship more of our jobs overseas”, or Senate Minority Leader Tom Daschle to state “If this is the administration’s position, I think they owe an apology to every worker in America”, and Speaker of the House Dennis Hastert to warn that “outsourcing can be a problem for American workers and the American economy”? If outsourcing has methodically been used for decades, then why the sudden fear for this old phenomenon? (Drezner, 2003)

The first wave of globalization began a hundred or so years ago, when companies sought to expand their frontiers and strike into new markets. This factor is still very much valid today as it stands for somewhere around 80% of all cross-border investments. The second wave of globalization saw companies try to take advantage of the huge wage-differential and produce goods in low-wage countries which were then exported back to the home market. The focus of the third wave of globalization was specialization in components and final assembly in regions with the strongest comparative advantage, which can be seen in markets such as consumer electronics. This is nothing new, and is clearly not what caused such and outrage when N.

¹ Reference at end of paragraph indicates that reference is valid for entire paragraph, while reference at end of sentence indicates it is valid for only that sentence.

Gregory Mankiw said what is quoted in the beginning of this chapter, and caused such a storm in the United States. (Drezner, 2003)

Sweden will serve as an example to show what is next on the horizon, and what worried so many on the other side of the Atlantic Ocean. The outsourcing boom in Swedish software industry to India is undeniable. Already many of the larger companies such as ABB, Telia, Ericsson have different development projects in cities such as Indian Bangalore (Q-labs newsletter No2. 2005). Anything that requires only a telephone and a computer could be outsourced. McKinsey suggests data entry, transaction processing, real-time customer support and different research and development services (Agrawl, 2005 (1)). This could be what scares the general public. Suddenly one can no longer rely on any jobs to be exclusive for the western countries. Now everyone must compete against countries on the rise, such as India, China, the Philippines and Taiwan.

A firm has much to gain from this highly debated phenomenon which has gotten so much media exposure. With websites like www.offshoreexperts.com out there offering its services as offshore outsourcing consultants, many firms are more than likely considering what offshore outsourcing could do for them. Because of the relevance of offshore outsourcing in this global age, it has been selected as the subject of this paper.

1.2 Purpose

The purpose of this paper is to explore the offshore outsourcing concept, so as to give a general overview of the most relevant issues and try to establish some of the risks associated with this endeavor. This is to be done by analyzing these issues and risks from a theoretical perspective.

As mentioned above, the purpose is to study offshore outsourcing, and not just relocating corporate functions to a low wage country, or outsourcing within the country in which the company is located. The reason for selecting this specific angle is that because of the management control often used today, with the focus put on short term increase of the stockholders wealth, and thus on short term company income increase or cost reduction (Bengtsson, 2005. p 34-46). Offshore Outsourcing to a low wage country offers an apparent quick solution to cost reductions without the higher fixed costs associated with relocating corporate functions.

1.3 Method

This paper is theoretical in its approach and thus not based on any new empirical data. Economic literature and papers constitutes the core of the paper, however empirical data from other sources will be used to some extent to show some well established facts, such as the gains of having to pay lower wages, and other data will be used as a starting point of the analysis of the downsides of offshore outsourcing.

1.4 Material

The main literature used to construct the theoretical framework has its roots in the basic and advanced classes on industrial organization and economics given at Lund University, as well as in a number of papers available from the scholarly journal archive database (www.jstor.org) and other sources.

Describing the outsourcing phenomenon, and its two siblings; offshoring and offshore outsourcing, a number of books concerning the subject will be consulted, as well as economic articles and reports in well-known publications.

The main bulk of the empirical reference will come from economic reports published on the McKinsey Quarterly website (<http://www.mckinseyquarterly.com>), and other websites such as www.cio.com. Using a commercial resource such as the McKinsey research is always problematical. The actual empirical data is not presented or available, and thus the results can not be verified. The empirical data is also focused on offshoring, relocation of corporate functions to a low wage country, and not offshore outsourcing, which is what this paper will try to cover. While this might seem like a large discrepancy, it is not as critical as one might assume at first glance. The trends for these are very similar, and the reasons for choosing either are also based on a common foundation, to a large part. The empirical research will therefore be used to show that there are cost reductions to be made by relocating to a low wage country, which implicates that there are similar possibilities for offshore outsourcing. The empirical data from McKinsey is also centered around India, and perhaps not in detail completely viable for all low-wage countries. Because of the limitations of the empirical data, it will only be used to show general trends.

It could have been possible to corroborate the McKinsey report with figures from more independent sources such as the World Bank, for general figures such as the wage differential between low-wage countries and industrial countries, and also to corroborate more specific figures such as the gains of offshore outsourcing with other possible sources. The sole reason for not including these figures is time constraints, and the fact that these figures would most likely not change the outcome of the paper to any major extent, except for an increase in reliability.

1.5 Limitations

The paper will focus on offshore outsourcing, and even though both outsourcing and offshoring will be discussed, it will not be in-depth and only as to give better understanding of offshore outsourcing.

While the analysis part of the paper focuses on some of the hidden costs of offshore outsourcing, it is by no means a complete analysis, but rather an introduction, which just scratches on the surface of this vast area, and tries to unfold the possibilities rather than giving all the answers.

1.6 Disposition

The disposition of this paper is as follows. Chapter one contains an introduction to the subject, as well as a discussion concerning the methods and materials used and their limitations. It gives the reader a possibility to get familiar with why a study like this is interesting, and also the problems which might occur when analyzing such a subject.

Chapter two lays the theoretical foundation needed to make an analysis of the outsourcing phenomenon. The theory of the firm as well as auction theory is presented, together with other subjects which are relevant to draw conclusions from and about the empirical studies.

Chapter three gives an introduction to outsourcing and its pros and cons. This is followed by a brief discussion about alternatives to outsourcing.

Chapter four shows empirical data for the cost reduction available through offshoring, which also implicates similar gains from offshore outsourcing. The chapter continues with describing problems with offshore outsourcing a corporate function, and the differences in work process between countries because of different factor inputs. This is followed by discussing the hidden costs of offshore outsourcing.

Chapter five includes the analysis of some of the hidden costs of outsourcing from a theoretical perspective. Finding a suitable vendor, establishing a contract, changes in production processes, and reasons for lower productivity, are the main hidden costs covered.

This is followed by a conclusion as to what has been gained from this paper, and if the goals set up were actually met.

1.7 Definitions

Some key definitions will be presented here to avoid any misunderstanding concerning such fundamental issues:

Outsourcing: Outsourcing is that process in which a cooperate function, made up of different activities, which previously was performed internally within the company, now instead is bought from an external supplier. (Axelsson, 1998. p 188)

Offshoring: Offshoring can be defined as relocation of business processes (including production/manufacturing) to a lower cost location, usually overseas. (<http://en.wikipedia.org>)

Offshore Outsourcing: Offshore outsourcing is the practice of hiring an external organization to perform some or all business functions in a country other than the one where the product or service will be sold or consumed. (<http://en.wikipedia.org>)

“A theory can be proved by experiment; but no path leads from experiment to the birth of a theory.”
/ Albert Einstein (1875-1955)

Theoretical Framework

This chapter will cover the necessary theory needed to create a suitable foundation on which one will be able to draw conclusions as to the different positive and negative attributes of outsourcing. Unfortunately even though much crucial theory is covered, not every aspect and angle is addressed, which of course would be impossible due to the indefinite amount of theory that has been presented in areas connected to industrial organization and outsourcing.

2.1 Coasian Theory of the Firm

What is a firm and how can one justify its existence? This is a question that needs to be answered long before there is any hope of analyzing the problem at hand. This paper will adopt Ronald H. Coase’s theory which was presented in one of his major contributions to economic theory, “The Nature of the Firm”, in 1937. This was the first real attempt to clarify and analyze these questions, and the theory has garnered new attention with the rise of e-commerce in the beginning of the new millennia.

Coase asks himself in the beginning of his paper: “Are my assumptions tractable? And: Do they correspond with the real world?”. He hoped to show that his assumptions were realistic throughout his paper, and he argued that they were “tractable by two of the most powerful instruments of economic analysis developed by Marshall, the idea of the margin and that of substitution, together giving the idea of substitution at the margin”. (Coase, 1937. p 1)

What Coase opposed when he wrote his paper was the notion that a normal economic system works in itself and that no economic planning is needed since this is already taken care of by the pricing mechanism. In the real world this model could not be flawlessly applied and thus additional factors had to be explained. Other economists had also realized this; Marshall had

introduced organization as a fourth factor of production, and yet others had given coordinating functions to entrepreneurs or managers. But if the price mechanism is taken into consideration, why is such organization necessary? Production is regulated by price movements, so why can't this be done without any organization? Economists of that time treated the price mechanism as a coordinating instrument, yes also admitted the coordinating function of the "entrepreneur". It was this gap in economic theory that Coase wanted to bridge. (Coase, 1937. p 1-3)

The main reason why it would be profitable to establish a firm would be if there was a cost in using the price mechanism. According to Coase the most obvious cost reduction would be the information or search cost to find out all relevant prices on the market. Another would be bargaining and contract costs between different actors on the market. Both these costs can of course be reduced by the emergence of specialists gathering all relevant information and selling it to the actors on the market, and exchange institutions making contracting agreements easier, however they can not be overlooked. In both the pricing case and the contract case, imagine the sheer amount of price information and number of contracts needed if every person was a one-man firm. This alone should give some idea of the magnitude of these costs. (Coase, 1937. p 3-4)

A legitimate question is then of course if there is a limit to how much a company can grow. Why is it not so that all companies are completely vertically integrated, and are there any limit to how large a company can grow? A primary reason could be that the cost of organizing additional transactions may increase. Naturally there must be a point when organizing an additional transaction cost as much as carrying out the transaction on the open market, or costs as much as letting someone else carrying out the transaction. A firm must try to reproduce the conditions of a competitive market while lowering the costs stated above, if the firm grows to large, it may no longer be possible to reproduce these conditions. There is also the possibility that the larger an organization becomes, the harder it becomes to allocate resources to where they are most needed. Finally, other issues may cause production costs to rise when production reaches a certain upper limit. This implies that firms with low increases in production costs, a low percentage of allocation mistakes, and low organizing costs tend to be larger. (Coase, 1937. p 5-8)

In this paper Coase Theory of the Firm will be used as the foundation to answer the questions why firms exist, and what limits their size on a general level. However to answer more specific queries concerning offshore outsourcing, newer specialized economic theory has to be consulted.

2.2 Auction Theory

With increased possibility of communication, and with the recent growth of e-commerce, the auction market has absolutely exploded. However while the most obvious application would be auction of different items on such websites as eBay, this can also be applicable to all kinds of contracts, such as outsourcing in countries all over the world. Where companies before were spatially limited, they can now reach almost anywhere.

When the governments of Europe auctioned out the UMTS licenses during 2000-2001, these were some of the largest auctions in history, which produced a variety of results. Licenses in UK were sold for 650 euros per capita, while licenses in Switzerland were sold for 20 euros per capita. Just like the governments outsourced these activities with different degrees of success, so can outsourcing of different activities by firms to low-wage countries produces different degrees of success depending on the selection process of partners. (Klemperer, 2004. p 151-152)

There are many different kinds of auctions that emanated for different purposes and on different places in the world. The historically most common one is called an *ascending-bid* auction, or an *English* auction, in which the auctioneer starts at a low price and climbs higher and higher until only one buyer remains. *The descending-bid* auction, or a *Dutch* auction, was commonly used to sell off flowers in Holland, and thus its name. Here the auctioneer starts at a very high price and lowers it until someone accepts. Another common arrangement is sealed bid auctions, in which every buyer hands in his bid in a closed envelope and the highest bid wins. There is a similarity between the *Dutch* auction and the sealed bid auction in that the winner pays the amount he was willing to give for the object, as compared to an *English* auction, where the winner pays whatever the second best bid was. Because of this, *Dutch* auctions and sealed bit auctions are often called *first-price* auctions, while *English* auctions are called *second-price* auctions. (Pepall, 2002. p 677-679) (Klemperer, 1999. p 4-5)

The object for sale at the auction has two different values to a bidder. A private value which is unique to the bidder, and a common value which is the same for all bidders. It is possible for an object to have both a private and a common value, but it is not necessarily so. A private value can be how much one enjoys a piece of artwork, or an original recording of ones favorite artist. One person's private value of a certain painting can be totally different from another person's private value. A common value can be something as the value of a construction contract or the value of an oil well. It is presumed that the object has one true value, common to all participants.

However, knowing this value is not trivial, and the more information one bidder possesses the better he knows how to place his bid, as to not pay too much, or lessen his chances of winning the bid. (Klemperer, 1999. p 7-8) (Pepall, 2002. p 678-686)

Whoever wins an auction where the object has a common value however always runs the risk of falling victim to what is called *the winner's curse*, which states that a winner can turn out to be the loser if he had information which caused him to misjudge the true common value. Because all bidders have gathered information from different sources about the true value, the winner bidder is likely the one who has the most optimistic information, and because of that made a high value estimation of the object. The winner's information is most likely upwardly biased and thus most probably too high. (Klemperer, 1999. p 8) (Pepall, 2002. p 684)

As seen above, participating in a common value auction demands a great deal of information gathering, and a sound bidding strategy to avoid the winner's curse. The only way to find a reasonable estimation of the true value is to collect as much information about the object as possible, but also about how much the other bidders know about the true value. (Pepall, 2002. p 684)

In a private value auction, the true value is known, so there is no risk of the winner's curse, however there is always the conflict between risk contra profit in first-price auctions. The risk in first-price auctions is that if one puts the bid low, to increase profit, then someone else might place a higher bid and win the auction, but if one puts a high bid to increase the probability of winning, then the possible profit decreases. In second-price auctions the best strategy is always to bid your true value and if you win, pay the sum of the second highest bid. (Klemperer, 1999. p 7-8)

Even though an auction might look like a pure common auction, in practice, there are always at least some asymmetries between the bidders. One bidder might have a slightly more efficient way to use the object for sale, or perhaps can utilize it with lower costs, or it might also be that a bidder has a reputation for bidding aggressively. If a bidder has a slight advantage, that is, a higher value when he wins, then he will bet more aggressively. While this direct effect might be small, there is an indirect effect in almost pure common value auctions. If a bidder bids more aggressively, this will increase the effect of the winner's curse should anyone outbid him, which causes the opponents to restrain their bidding somewhat. This means that the bidder with the slight advantage has a reduced winner's curse, and thus can bid even more aggressively. A small

initial advantage can in this way give large competitive advantages in a ascending common value auction. (Klemperer, 1998. p 1-2)

In the offshore outsourcing context the asymmetry above could be such things as production costs, human capital, reputation or other competitive edges which some firms hold over others, thus getting the contract at a larger gain than would have been possible under symmetric conditions.

In this paper, the basic auction theory above will be used in the analysis of who gets a outsourcing contract, which is commonly, formally or informally, auctioned out to the lowest bidder.

2.3 Long-run Relationships

Interacting with other parties can be troublesome to say the least. How can one party be certain the other will hold an agreement even if better opportunities come along? What problems lie in establishing a successful cooperation between two parties, and what are the primary costs in doing so? The following chapter will try to shed some light on questions related to long-run relationships.

Relationships which span over a greater period of time are often associated with specific investments or switching costs. Switching costs are primarily related to knowledge transfer costs, such as the old development team teaching the new development team company specific routines and work methods, which they might be reluctant to do in case they are being replaced. This kind of investment is investment in human capital, and can also include such things as language skills and ability to work in larger teams. Switching costs could be said to be idiosyncratic investments in that continues trade with a specific party yields surplus compared to trading with others. Future trade is the focus of the investment. (Tirole, 1988. p 21)

When ever an investment is tied to a certain party, the outcome is the same. The parties that make the investment now know that in the future this investment will yield surplus, that there will be gains of trade to be exploited by the parties. The important issue is that the right amount of trade is conducted, and this can only be done if the gains from trade are exploited correctly, and divided properly to induce the right amount of specific investment *ex ante*. The question is of course how to achieve this optimal situation. (Tirole, 1988. p 21)

The model used to clarify this is as follows. There are two time periods; one before trade can take place, *ex ante*, and one when trade can take place, *ex post*. *Ex ante* the parties may make specific investments to increase *ex post* surplus, and the parties may also write a contract specifying the terms of trade *ex post*. *Ex post* the parties can choose to trade, depending on a bargaining process or the terms of a contract written *ex ante*. (Tirole, 1988. p 21-29)

Bargaining without complete information causes inefficiency because both parties would like to appropriate the gains from trade, but because of asymmetric information run the risk of forgoing trade in order to get a larger share of the surplus. More generally it can be shown that if information about costs and profits are private, if gains from trade are not always guaranteed and the parties are free not to trade, there exists no efficient bargaining process. Because of this a

contract is needed *ex ante* before investments are made, to make certain the right amount of trade is conducted and that the gains are exploited correctly. (Tirole, 1988. p 22-23)

Investment is also suboptimal when no contract has been signed *ex ante* because of the simple fact that the party investing does not capture the entire surplus generated *ex post*. The non-investing party can use the threat of not trading to appropriate some of this surplus. This has been called *opportunism*, and yields an underinvestment in specific assets. (Tirole, 1988. p 24-25)

If a contract has been signed *ex ante* that specifies the amount of trade and transfers which are to take place between the two parties *ex post*, the situation takes on a different outlook. If the selling party has a commonly known production cost for its product, but the value of the product for the buying party is unknown, there is a simple way to avoid inefficiencies. It should state in the contract that the buying party set the price *ex post* that it wants to buy the product for, thus setting the lowest price possible, and requesting the largest quantity possible, until they are indifferent between buying one more extra unit of the product, and just saving the money. The seller can only accept the trade or not and is indifferent between the alternatives. This creates the largest possible joint surplus *ex post*, however to divide the gains of this trade, the buyer must make a transaction to the seller of a part of that surplus, when the contract is signed. (Tirole, 1988. p 23-24)

With bilateral asymmetric information, that is unknown costs and values for both parties, it is no longer efficient to let any of the parties set the price on the day of the trade, or to have a previously agreed upon price and let one of the parties choose the quantity. A simple rule is to set a fixed amount of trade and the price in advance, and stick to these agreements even if production costs should change or the buyers value of the product increase. However such a rule is only efficient if the parties know that the buyer values the product higher than the production cost. (Tirole, 1988. p 23-24)

Let it be assumed that the parties can write contracts *ex ante*, specifying the amount of trade *ex post*. Also assume that specific investments are observable but not verifiable, that is, each party can observe the amount of investments made by the other party, but it is not measurable by a court. The threat of not trading, when the other party has made sizable investments, is often used to appropriate a larger part of the common gains. It may be desirable to impose penalties for breach of contract, thus binding the parties to each other and preventing opportunism, and create incentive for making optimal investments. One problem with high penalties is of course that it

forces parties to trade even though there are no gains. A good basic rule to solve this problem is to let the investing party decide over the price, or over the trading decision if the other parties cost information is known in advance, and transferring a lump sum to divide the gains from trade when the contract is signed. (Tirole, 1988. p 26-27)

Long term contractual relationships carry with themselves a few problems. The most obvious would be the presence of outside opportunities, and the fact that it might sometimes be desirable for one or both of the parties to end the contract. Sometimes a breach might be best for both parties, and a too harsh a contract could be disadvantageous. The contract has to have the optimal trade-off between flexibility and the prevention of opportunism. (Tirole, 1988. p 27)

Another problem which could arise is that long term relationships tend to promote collusion between members of the two contractual parties. People who work closely together may identify more with members of the other party, thus creating inefficiencies. This problem can be solved with rotation of workers; however such a process is costly, not only because of administration, but also because of loss of human capital where it is needed the most. Finally a short-term contract may induce parties to try to better their bargaining position for next contract phase and extract more effort, while a long-term relationship gives little incentive to perform above what is contracted for. (Tirole, 1988. p 27)

Yet another issue stems from the fact that it is almost impossible to write complete contracts; the impossibility of taking into account every variable, every outcome, every action and the fact that these must be verifiable by a third party. Due to this fact it can be shown that parties are unable to sustain efficient investment levels. (Hart, 1985. p 23)

In this paper the theory recited above will be used to describe some of the complexities concerning the long term relationships between a company and its outsourcing partner. But just as a contract is often incomplete, the theory presented here does not cover every variable, every outcome and every angle, but hopefully the more crucial ones.

2.4 The Principal-Agent Relationship

It is assumed in most economic theory that firms will try to maximize expected profit, and it is also a basic assumption in this paper. At least this is what firms would do if the owners were able to make all the decisions, however this is often not the case. The shareholders of the firm are the claimants of its revenue, and they would minimize cost and maximize revenue if they were the decision-makers. However such is often not the case, and non-profit maximization is often associated with the separation of ownership and control. (Tirole, 1988. p 34)

The principal-agent problem arises from the fact that there might be lacking incentive for a manager to increase effort in order to increase profit, because the personal utility gains are not closely linked to this increased profit. (Tirole, 1988. p 35)

It is often assumed that the principal is risk neutral, only expected outcome matters and not the risk, and that the agent is risk averse, which implies that when facing choices with comparable returns the agent selects the less-risky alternative. This should be an acceptable assumption, since risk is often shared among multiple shareholders, but the manager often carries her or his risk alone. (Tirole, 1988. p 34-37)

Another factor is if the agent's actions are observable or not. If the principal has complete insight in the agent's actions then the principal can just state a desired level of effort which is expected of the agent, and threaten with severe punishment if this level is not achieved. However, often it is not possible to have that kind of insight into the affairs of the agent, because the price of monitoring the agent is simply too high. It would be possible to use factors such as profit to measure the effort of the agent, but this would not give the whole picture since other factors play into this variable as well. (Tirole, 1988. p 37) This paper will be based on the assumption that complete observation of the agent's actions is not possible.

Since the principal is assumed to be risk neutral, it would seem preferable to give the agent full insurance; income is constant over all possible states, because the principal is indifferent to carry this risk or not, and the agent prefers not to carry any risk. However it has been shown that this creates a serious incentive problem. If the agent's effort level affects the profit, then it would be in the principal's best interest to have the agent put in as much effort as possible. However if the effort level does not affect the income level of the agent, then the agent has no incentive to put in any effort at all, assuming that effort has a decreasing effect on the agent's utility function. So full

insurance conflicts with incentive, and the trade-off between insurance and incentive often leaves parties with a suboptimal solution to both. (Tirole, 1988. p 35-38)

If the principal measures the effort level of the agent with high or low profit, then the principal would have to induce the agent to put in high effort by offering a higher wage should the higher level of profit be reached. Effort, if not properly observed, must be induced through incentive. However inducing through incentive removes insurance, and because the agent is risk averse, this increases the wage bill. Because of this it is possible that the principal might not wish to induce high effort, and thus high profit, due to increasing costs. (Tirole, 1988. p 37-38)

An additional problem to determine individual performance could be if a number of agents work in a group. Unless the agent is accountable for a certain area it could prove difficult to get a good figure of the relative performance of the agents that work together. This creates a free-rider problem in which the agents would rather have the others to their work, and still receive an equal share of the profits. (Tirole, 1988. p 45)

Finding an optimal incentive scheme when the agent is risk-averse is difficult to say the least, and without being able to properly observe the agent's effort properly, but only through possibly related variables such as profit, it would seem like there is little stopping managers from avoiding effort as much as possible. Luckily there are other factors which could affect the behavior of the agent.

Yardstick competition is one way to evaluate results, verifiable or not, of an agent's individual performance. When measuring performance it can be difficult to take into account all the known and unknown factors which affect the results, however by comparing two or more agents in similar positions it is possible get a good estimate of their performance *ceteris paribus*. Performing worse than other agents would give lower personal profit, and thus encourage the agents to try to outperform their opponents. (Shleifer, 1985. p 9-10)

Other more elusive factors that perhaps encourage a manager to put in effort, even though it decreases her or his short-term utility, are the concerns of their careers within a company, and the fear of being taken over by another, more effective, company and thus replaced by a more proficient manager, who accept short-term utility losses to receive a higher expected long-term utility. Performing well within a company may also increase agent's chances to get good opportunities on the open market as well, and thus gives incentive to put in a little extra effort. (Tirole, 1988. p 42-44)

“Rule #6: The best companies outsource to win, not to shrink. They outsource to innovate faster.”

/ The World is Flat, Thomas L. Friedman, pg 360

Outsourcing

To be able to analyze offshore outsourcing, it is first necessary to build a foundation of knowledge concerning outsourcing. This chapter will begin with a short introduction, and especially, what functions and activities in a company which are suitable for outsourcing. In the following chapter the pros and cons of outsourcing will be listed, to have as a reference frame when discussing offshore outsourcing, because almost everything that applies for outsourcing, also applies for offshore outsourcing in one way or the other. This section will be concluded with a chapter concerning the alternatives to outsourcing. This is to give the reader a notion that there are other alternatives, and to highlight some of the weak points of outsourcing even more.

According to Coase, as seen in previous chapter, a firm's size depends on productions costs, allocation mistakes and organizational costs. When the firm grows larger, these costs tend to increase and there must be a point when organizing an additional transaction cost as much as carrying out the transaction on the open market, or costs as much as letting someone else, such as an outsourcing partner, carrying out the transaction. (Coase, 1937. p 5-8). However the outsourcing decision is more complex than that, as will be shown in this chapter.

3.1 Core Capability

What corporate functions are suitable for outsourcing? There are many services and activities in a firm which are suitable for outsourcing. Almost everything except that which in the specific firm is deemed as the core capability (Axelsson, 1998. p 188). In this paper, the definition of core capability will be that of Axelsson, 1998, page 194:

Core capabilities are the most critical and most distinctive resources a firm possesses, and the most difficult to copy when they are, in a number of processes, linked together with the appropriate strategic targets which the firm strives towards.

When a firm has managed to identify its core capabilities, it becomes easier to reallocate the firms limited resources. The firm can focus on those activities and resources which generate a unique value, and this should secure the competitive edge which the firm possesses in a long-term perspective. It should also be apparent which activities could lead to a constant development and refining of the core capabilities. (Axelsson, 1998. p 195)

Long & Vickers-Koch (1992) have developed a model to separate the different activities in the firm into different groups, so as to differentiate the more indispensable from the periphery activities. Their model will be presented below:

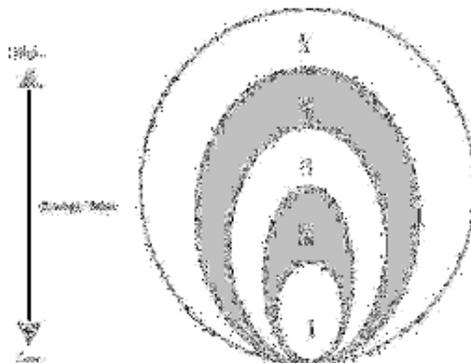


Figure 1 – Long & Vickers-Koch Activity Model

1. “Cutting Edge” capabilities

These are the activities and functions which are critical to the firm’s future in a competitive market. These are the core capabilities of tomorrow, without which the firms activities and functions will become outdated and obsolete.

2. Core Capabilities

3. Support Activities

These are activities which are directly related to the core capabilities and must be a part of the firm as support, without which the core activities will not function properly.

4. Dispensable Activities

Activities which are part of the main process yet easily separated from the rest and not part of the core capabilities.

5. Peripheral Activities

Activities which are not related to the main processes of the firm.

Having this separation of activities can give the firm a better ability to separate more important activities from less important ones. This knowledge can in turn stand as guidance for decisions concerning in- and outsourcing, together with corporate strategy. (Axelsson, 1998. p 204)

3.2 Pros and Cons of Outsourcing

This chapter will list the pros and cons of outsourcing to get a better idea of as to why a firm would want to outsource a function or activity. It is not a complete list, but more of an indication to some of the major points that influence the decision.

However, first another issue must be clarified. Are there different types of outsourcing, or do you always just outsource an entire function? This question was answered by van Weele (1994, p 44) when he divided outsourcing into two different categories. It is possible to outsource an entire function, integrated outsourcing, but also to outsource an easily detachable part of a function, fragmented outsourcing, when the firm still coordinates the different parts of the function. (Axelsson, 1998. p 189)

The pros and cons of outsourcing will be listed in a table below, as presented by Axelsson (1998, p 193), and should be used to get an overview of the phenomenon, and create a foundation for the later analysis of the negative sides of offshore outsourcing.

Pros	Cons
- The firm's investments can be focused on the core capabilities.	- Increased dependency on suppliers.
- Optimal utilization of knowledge, equipment and experience from third party.	- Continues monitoring of costs related to the supplier is often necessary.
- Increased flexibility; fluctuations in the workload can be more easily absorbed.	- Communication and organization problems when transferring activities to third party.
- Outsourcing leads to easier and more definable primary processes within the firm.	- Confidentiality breaches.
- Input from outside observers decrease risk of close-mindedness within the organization.	- Social and legal problems.
- Decreased risk	

Table 1 – Pros and Cons of Outsourcing

Source: Axelsson, 1998. Page 193

3.3 Alternatives to Outsourcing

This chapter will discuss if it is indeed necessary to outsource to stay competitive or if there are other alternatives and solutions. Research has been started on the subject of alternatives to outsourcing, and in this chapter some of Lars Bengtsson's, Christian Berggren's and Johanny Lind's research in *Alternativ till outsourcing* (2005) will be presented, to give a more multifaceted knowledge base concerning outsourcing.

In their research they established that major firms (Siemens, Sandvik and Scania) are still making production investments in Sweden even though they have the possibility to outsource the production to low-wage countries, and even though for example Siemens has as a goal to relocate more production to low-wage countries. Some of the important factors for this decision was that being able to delivery in large quantities and with good quality on short notice, has high priority, that there is great potential for systematical improvements and cost reductions in the production process even in high wage countries, and also because of economies of scale, which might make it possible to match production costs even with higher wages. (Bengtsson, 2005. p 17-35)

Another area of their research is that of management control which focuses on short term cost reductions and revenue increase, to increase stockholder short-term profit. Due to increased interest in stock value many firms have outsourced corporate functions to gain short-term cost reductions, and because of this lack of long-term planning, it often leaves the company with loss of flexibility, being forced to adapt to suppliers' and outsourcing partners' needs to handle complex dependencies. According to the research it would be preferable to move away from this kind of financial management control, and also measure by other means such as product quality, work process and production capabilities. This would give the firm more opportunities to improve the work process and have better possibilities to commit to long-term investments and a better use of the firms resources. (Bengtsson, 2005. p 34-46)

If outsourcing was one solution, and use of economies of scale and automation another solution, they also speak of a third option; that of constant improvement with minimal input, to improve the development process and structure it in a way which makes it possible to make use of the competence within the company to improve the work process and the products. To establish an improvement process in itself however takes some effort, and in an initial stage it requires not only sufficient management support but also a competent and flexible work force.

This could of course also be used in parallel with automation, but also for firms which do not have automation to any major extent. (Bengtsson, 2005. p 85-99)

Except for what has been mentioned above, their research also strongly point out the importance of close collaboration between production and research and development to achieve reduced costs, better control over the entire process, shorter time for a product to reach the market, and better ability to answer to an increased demand for products, as well as development of new applications. Outsourcing of production makes this kind of close collaboration much harder, and demands much closer attention to the selection of outsourcing partners, as well as time and effort to cultivate a close relationship with these partners. (Bengtsson, 2005. p 148-161)

“The other part of outsourcing is this: it simply says where the work can be done outside better than it can be done inside, we should do it.”

/ Alphonso Jackson, Deputy Secretary and Chief Operating Officer of Department of Housing and Urban Development

Offshore Outsourcing

This chapter will begin with outlining the key points of articles published on the McKinsey website (www.mckinseyquarterly.com) concerning the gains of offshoring. Their research is not only aimed at providing results on the gains of offshoring, but also what measures needed to be taken to utilize the full potential of offshoring, which is presented in the preceding section. This will be followed by a presentation of some of the hidden costs of offshore outsourcing.

4.1 Cost Savings associated with Offshoring

McKinsey & Co has published many economic studies on the topic of offshoring. One in particular, *Who wins in offshoring*, by Vivek Agrawal and Diana Farrell concerns the economic gains of offshoring, not only by the relocating company, but by everyone affected by this process. The conclusions of this economic study will be presented here, and used for further analysis in a subsequent chapter.

Of what magnitude is the offshoring phenomenon as of yet? In July 2003, 400000 US processing jobs had been moved abroad, and widely cited figures predict that by 2015, roughly 2.9 million more jobs will have followed the same fate. Other research indicates that the number of US service jobs outsourced will increase 30 to 40 percent annually until 2008. The main reason for this is of course the large difference in wage between for example a software developer in America, who costs \$60/hour, and a software developer in India, who costs 6\$/hour.

So what revenues does one spent US dollar spent in India generate? According to the study, India earns at least 33 cent, in the form of government taxes, wages paid by US companies, and revenues earned by Indian vendors of the business process service and their suppliers. Offshoring also creates value for the US economy (and analogously to any economy taking advantage

offshoring), as well as freeing up resources for other sectors which can make better use of the resource.

Perhaps the most important figure in the study, for this paper, is how much a company can save per dollar by offshoring business services. According to the study this figure amounts to 58 cents per dollar, with the cost reduction mainly in the greatly reduced wages. In the study they also state that offshore service are identical to the what they replace, or sometimes even better due to the fact that offshore workers get higher wages than they usually earn and therefore are more motivated to perform well.

Offshoring also generates new revenues because the Indian offshore companies need a wide range of services themselves to become operational, and some of these services are bought from the offshoring country. The study estimates that for every dollar a company spends in India instead of in the United States, suppliers of offshore services buy an additional five cents worth of goods and services in the United States.

Another way in which offshoring generates revenue for the US is that many of the Indian offshore services are indeed american companies. These companies generate somewhere around 30% of the indian offshore revenue, and repatriated earnings amounts to around 4 cents per dollar spent on offshoring by the United States.

Except for the direct benefits detailed above, there are many indirect benefits which follow in their wake. For example the capital saved because of offshored jobs can be used to create new jobs which generate even more revenue. All indirect benefits of offshoring are, according to the study, estimated to benefit the US economy with an additional 45 to 47 cents per dollar spent on offshoring enterprises.

In total this would generate a net gain of 12 to 14 cents for the US economy per dollar moved offshore, however for this paper the 58 cents in cost reduction for the company is the most important figure, and not the total gain of the whole economy. This figure will be used as reference in later parts of this paper.

4.2 Factor Inputs

If a company is planning to relocating production or development, just moving the entire facility to India without any modification is not utilizing the full potential of offshoring. This is discussed in an article by Vivek Agrawal, Diana Farrell, and Jaana K. Remes, called *Offshoring and beyond*, which is published at the McKinsey website. (www.mckinseyquarterly.com)

What is discussed in the article basically boils down to the production function of a company ($q = f(L,K)$) and the optimal way to mix capital (K) and labor (L), to maximize output (q) with the lowest possible cost. Depending on how much one extra unit of labor (marginal product of labor) and capital (marginal product of capital) produces, and the cost of one extra unit, in the form of wage (w) for labor, and rent (r) for capital, the profit function below, together with the production function, gives the best combination of inputs. (Borjas 2005, p 104-108)

$$\text{Profits} = \text{unit value of output} * q - w * L - r * K; \quad q = f(L, K)$$

In the article it is stated that merely replicating the work process at home is not the way to utilize the full potential of offshoring. Since wages are so much lower, and capital equally or more expensive than home, the proportions of each input must be modified. A reorganization, and reengineering of operations, is in order, to utilize the surplus of labor and to minimize use of expensive capital. There are of course several ways to go about this business, and some alternatives are mentioned in the article.

One alternative is to increase working hours and have round-the-clock-shifts, for even though the labor costs will be slightly more expensive, the more efficient use of capital will more than offset this slight increase in wage costs. According to the study, companies can reduce operating costs by as much as 30 to 44 percent for many types of offshore work.

Another option is to use locally produced capital to lower costs for this factor input. For example, instead of buying expensive Microsoft software, having the Indian software developers producing equivalent software, which might even suit the company's special needs even better than the more expensive counterpart.

The final advice presented in the article is perhaps the most intuitive. Reduce automation, thus reducing the use of capital, and increasing the use of the cheaper factor input, labor.

While the article was written on offshoring, the issue is still of importance for offshoring outsourcing. To outsource a single corporate function might not require any reorganization, and the outsource agent might already have the means to take over the function successfully, however if entire production chains are to be outsourced, these still need to be reorganized and reengineered, and thus the article is still valid for our purpose.

4.3 Hidden Costs of Offshore Outsourcing

While the cost savings of offshore outsourcing might seem staggering at first glance, there are however some drawbacks which might affect the final outcome, that are perhaps not easily recognizable without deeper insight concerning the issue. In an article on the website www.cio.com, Stephanie Overby discusses the hidden costs of offshore outsourcing, and that moving jobs overseas might be much more expensive than it initially appears to be. This section will present some of the relevant findings of that article.

Selecting a suitable vendor, establishing and maintaining a good relationship with this vendor, negotiating a contract, additional project leaders to facilitate cooperation, hiring offshoring experts for advice, traveling to meet offshore contacts, and different legal fees, are additional expenses on top of the annual cost of the deal. These costs can range from 1 to 10 % of the annual cost of the deal.

When a contract has been established and everything is good to go, there is still the question about the transition period, when the offshore agent needs to learn company specific applications and additional knowledge transfer which is necessary to be able to start production. It might be necessary to fly in offshore developers to study technology and architecture, and laws may force the company to pay these the same salary as ordinary workers, while they are in the company's home country. Not only must resources be allocated to transfer knowledge to the offshore developers, but their salary has to be paid in full, without them producing anything. The offshore partner also needs to get infrastructure in place during this period, and even though the cost might not be incurred by the outsourcing company, the time it takes can still be critical and production might be delayed if this takes more time than estimated. These costs can range from 2 to 3 % of the annual cost of the deal.

Especially in countries with harsh labor laws it can be very expensive to cut down on the in-house work force to replace them with offshore outsourced resources. It may often be necessary

to give the retention and severance bonuses, because you need the workers to stay long enough to transfer knowledge to their offshore outsourced counterparts. If these bonuses are not high enough, the company might run the risk of old employees leaving before the knowledge transfer is complete, thus costing the company even more money than what the bonuses would have cost. It is often also bad for the morale of the remaining in-house employees, and can lead to lower efficiency and company loyalty. Also legal actions from laid off workers can cause additional costs. These costs can range from 3 to 5 % of the annual cost of the deal.

It is not possible to just replace one American worker with an Indian worker, and think that productivity will automatically remain the same. Indian workers have a different mentality and often less experience. On average IT organizations going offshore experience a 20% decline in application development efficiency during the first two years of the contract. These lags in productivity can cause as much as 20 % increase in cost to the offshore contract. Another problem with Indian offshore vendors is the high turnover rate, which induces extra costs due to loss of human capital. The outsourcing company pays for Indian developers to learn company specific human capital, and then the developers leave the offshoring agent, and all that money goes to waste. The turnover rate can increase the cost of the offshoring contract with additional 1 to 2 %. Then there is also the communication problem, not only because of the distance and the different languages, but also because some thing might be interpreted differently in different cultures. Language and cultural differences could cost somewhere around an additional 3 to 5 %. All in all, production lags like the ones mentioned above can cause cost which range from 3 to 27 % of the annual cost of the deal.

If the company does not have a proper development process then standardizing specifications, documentation, development process, quality assurance testing and similar issues will also increase costs. This is estimated to increase annual cost with somewhere around 1 to 10 %.

There are also additional costs in managing an offshore account. Not only are there costs in renegotiating contracts, but also to make sure that time is recorded correctly and that money flows in the right direction at the right amount. There is also the need for someone to make sure that projects move forward, and to keep a look out for which offshore agents might be suitable for future projects. The costs of managing offshore contracts can add from 6 to 10 % to the annual cost of the deal.

“I have had my results for a long time: but I do not yet know how I am to arrive at them.”

/ Carl Friedrich Gauss (1777-1855)

Analysis

In this chapter the hidden costs of offshore outsourcing will be analyzed from a theoretical perspective. Outsourcing, which was presented in chapter three, will not be the focus of this chapter, but it is instead the difference between outsourcing and offshore outsourcing which will be in the spotlight. If a firm is after the positive effects of outsourcing alone, then offshore outsourcing is not necessary, but if it is low cost outsourcing services the firm is after, then it might look at offshore outsourcing as an alternative. The wage differential which was presented in chapter four will also be peripheral; because it is an already established fact that lower wages are beneficial, however the costs, hidden or otherwise, are more elusive and thus the focus of this analysis, since these costs are more than likely critical for the decision to outsource to low wage countries or not. Plain relocation of corporate functions to a low wage country will not be discussed, even though many of the costs are relevant for both cases.

When reading this chapter, it is preferable to have the theory chapter fresh in mind, as well as the knowledge base build in chapter three and four about outsourcing and offshore outsourcing. Everything will not be referred to specifically, but is still needed to have a proper overview of the subject at hand.

5.1 Finding a suitable vendor

It was stated above that selecting a vendor and maintaining the relationship can add somewhere around 1 to 10 % to the annual cost of the contract. It is possible to look at the selection of a vendor as an auction of some kind, since the purpose of the selection is to find a vendor that will fulfill the obligations of the contract at the lowest price possible. This just like the US government awards contracts by procurement auctions, in which case the auctioneer is seeking as low a price as possible (Klemperer, 2004. p 1). However constructing the correct form of auction for the firm's specific needs is no easy task, and just like many other auctions throughout history it can go terribly wrong if constructed incorrectly. Auction design must be tailored for both its environment and to the designer's objectives, and is not a "one size fits all" matter (Klemperer, 2004. p 153).

The first major problem when constructing an auction involves the risk explicit and tacit collusion by participants to avoid bidding up prices. A second area of concern in practical auction design is to attract bidders, because if there are too few, this increases the chance of the auction being unprofitable to the auctioneer. Many disastrous auctions were greatly aggravated by the failure to set a proper reserve price, which must also be taken into consideration when constructing the auction. Other than what has been mentioned above, such things as political problems, loopholes in the auction rules, the credibility of the rules and the market structure also need to be taken into consideration. (Klemperer, 2004. p 103-113)

There are many possible solutions to these problems, and designing an auction that solves these for a firm's particular need will cost money which might not be calculated for at the beginning of the outsourcing project. Choosing not to solve these problems will most likely amount to unnecessarily high costs for the firm because of faulty auction design, such as in the case of the UMTS auctions in Switzerland, which yielded significantly less than in other European countries due to the reserve price being set too low and collusion essentially being allowed due to poor auction design (Klemperer, 2004. p 157). When the outsourcing partners are on the other side of the world instead of in the firm's backyard, holding auctions, and validating that the auction bidders can indeed meet the contract demands must inevitably cost more, even with the improved communication of this day and age.

5.2 Establishing a contract

The costs of managing offshore contracts can add from 6 to 10 % to the annual cost of the deal, is what was stated in the article. Establishing a contract was shown in the theory section to be critical to achieve optimal investment levels. However there are a number of costs associated with establishing a complete contract which might not be taken into consideration at the beginning of the outsourcing project.

The main reason for incomplete contract is usually stated to be transaction costs of different sorts. There are always unforeseen contingencies which are almost impossible to predict beforehand, so parties must agree to a contract which does not explicitly state those contingencies, or sign no contract at all. Also even if it was possible to foresee every possible contingency, they could be so many that the cost of writing each and every one of them into the contract would just be too costly. Finally there is the cost of enforcing the contract should it be breached. The contract must be verified and understood by authorities and there must be someone to enforce the punishment for not abiding by it. (Tirole, 1999. p 3)

It could be argued that these transaction costs are indeed greater when dealing with a party in another country, where face-to-face meetings are irregular and costly, where cultures and possible contingencies differ, and where legislation is different and enforcing the contract might not be as easy. If these costs are greater than the loss of not having optimal investment, together with other costs of not having a complete contract, then an incomplete contract might be preferable.

Because the offshore outsourcing endeavor often requires more specific investment than other similar partnerships to reach acceptable performance levels, because of distance, different cultures and languages, different legal systems, and different business praxis, it creates greater possibilities of *opportunism*¹ which could of course have been avoided with complete contract. However as mentioned above, complete contracts are often unattainable. Great care should be taken when writing an offshore outsourcing partnership contract, because of the increased risk of opportunism that comes with necessary greater investment levels (Tirole, 1998. p 22-23).

¹ See chapter 2.3 for definition of opportunism

5.3 Different production process

Expect to spend an extra 1 percent to 10 percent on improving software development processes, is what was stated in the article “*Hidden costs of offshore outsourcing*”. In the “*Offshoring and beyond*” article it is stated that the production/development process need to be re-engineered to utilize the full potentials of outsourcing. When the outsourcing partner is geographically located close to the firm, their process is most likely very similar, with the same proportion of factor inputs, and thus major re-engineering may not be necessary. However if the company is located in a low-wage country, then not utilizing the lower factor input price would seem like a waste of resources.

When moving the production to a low-wage country, what happens is that the capital rent (r) remains the same, or increases, while the labor wage (w) decreases. The optimal input combination for the new input costs needs to be found, but to do that the marginal rate of technical substitution must first be defined.

Marginal Rate of Technical Substitution: *The rate at which one input can be replaced by another without changing the output level.* $MRTS = \Delta output / \Delta input_L / \Delta output / \Delta input_C$
(Schotter, 2001. p 167-170)

It can then be shown that $MRTS = w / r$ for the optimal input combination (Schotter, 2001. p 196). This is intuitive because if it was not true, you could always replace say one unit of capital with n number of units of labor, when $w < r/n$ for each unit, and would pay less for the same output. However if $MRTS = n$ and $w/r = n$, then it would not be possible.

This means that when w decreases, $MRTS$ must also decrease if the optimal input combination is to be maintained. This in turn implicates that $\Delta output / \Delta input_L$ must decrease, and/or $\Delta output / \Delta input_L / \Delta output / \Delta input_C$ increase, which happens when capital is replaced by labor as factor inputs, due to *the law of diminishing returns* which states that the marginal product of both capital and labor will decrease as the amount of input increases (Borjas 2005, p 106).

5.4 Productivity

All in all, production lags can cause cost which range from 3 to 27 % of the annual cost of the deal, is what was stated in the article “*Hidden costs of offshore outsourcing*”. To analyze this problem the von Neumann-Morgenstern Utility index will be presented, as well as the optimization principle; Expected Utility Maximization, and how these are relevant to the described problem.

Suppose that there are n possible outcomes an individual might encounter by participating in a situation of some kind. Let these outcomes be denoted by X_1, X_2, \dots, X_n and assume that these are arranged in an order of increasing desirability. Arbitrary numbers are assigned to the two extreme outcomes as following:

$$U(X_1) = 0$$

$$U(X_n) = 1$$

The point of the von Neumann-Morgenstern theorem is to show that there exists a way to assign specific utility numbers to all other outcomes as well. (Nicholson, 2002. p 201-202)

To assign a value to $U(X_i)$, set a probability π_i at which an individual would be indifferent with getting X_i with *certainty* and a *gamble* offering prizes X_n with probability π_i and X_1 with probability $(1 - \pi_i)$. The probability π_i therefore represents how desirable the outcome X_i is. Consider the following equations:

$$U(X_i) = \pi_i * U(X_n) + (1 - \pi_i) * U(X_1)$$

$$U(X_i) = \pi_i * 1 + (1 - \pi_i) * 0 = \pi_i$$

By this it has been shown that it is possible to attach a utility number to any other outcome by knowing the probability of the best outcome in the gamble. (Nicholson, 2002. p 202)

Expected utility maximization is then defined as follows:

If individuals obey the von Neumann-Morgenstern axioms of behavior in uncertain situations, they will act as if they choose the option that maximizes the expected value of their von Neumann-Morgenstern index. (Nicholson, 2002. p 203)

Using the above together with the Principal-Agent chapter in the theory section, it is possible to give one of many partial explanations to the lower productivity of the offshore outsourcing partner. First the worst and best outcome of an individual working for the outsourcing partner

will be defined together with the utility value of working hard, and utility function of working with lower productivity:

$$U(\textit{Getting fired}) = 0$$

$$U(\textit{Getting salary}) = 1$$

$$U(\text{Low Productivity}) = (1 - \pi_{\text{Low productivity}}) * U(\textit{Getting salary}) + \pi_{\text{Low productivity}} * U(\textit{Getting fired})$$

$$U(\text{High productivity}) = U(\textit{Getting salary}) - k = c$$

$\pi_{\text{Low productivity}}$ = Chance of being detected while performing at low productivity

$(1 - \pi_{\text{Low productivity}})$ = Chance of not being detected while performing at low productivity

$-k$ = The personal utility cost of working at high productivity, due to stress and similar issues

c = The utility value of working at high productivity, which is independent of $\pi_{\text{Low productivity}}$

For a worker to perform with high productivity $U(\text{High productivity}) > U(\text{Low Productivity})$, and for this to be possible $\pi_{\text{Low productivity}}$ must be sufficiently large. One reason why it could be argued that $\pi_{\text{Low productivity}}$ is lower in low-wage countries, is that it is harder to monitor the individual workers there because of lacking routines, equipment or similar, and that it might not be in the best interest of the outsourcing partner to increase monitoring, because of increased costs, which offset some of the gains of using cheap labor. Having a small number of workers using a larger amount of capital should be much easier to monitor, as compared to a large number of workers performing the same task with a small amount of capital. However one could also argue that monitoring costs in low-wage countries are lower because the wages paid to the monitoring staff is also much less than in high wage countries. If the firm itself wished to monitor its outsourcing partner's workers, such factors as language, culture and similar factors would most likely play a factor in making the monitoring less efficient.

An additional factor that would induce low productivity would be if $U(\textit{Getting fired})$ was increased. This could happen if, like stated in the article, the turnover rate was higher and fired workers could easily get a similar job with another company. Then $U(\textit{Getting fired}) = b$ and the following equation would have to be met if the worker was to still perform at high productivity levels:

$$c > (1 - \pi_{\text{Low productivity}}) * 1 + \pi_{\text{Low productivity}} * b$$

“I believe through learning and application of what you learn, you can solve any problem, overcome any obstacle and achieve any goal that you can set for yourself.”

/Brian Tracy

Summary

The purpose of this paper was to explore the offshore outsourcing phenomenon, give an overview of what and why to outsource, look at the gains of offshore outsourcing, but more specifically to look at the possible hidden costs that could arise from having an outsourcing partner on the other side of the world in a low wage country.

The hope is that the theoretical foundation was solid enough to give a good understanding of potential problems that a firm could face. Chapter 3 hopefully gave a good enough understanding, as to what and why a firm outsources when it comes to production or development, so that the offshore outsourcing chapter was put into clearer context. Chapter 4 began with verifying that offshore outsourcing is indeed lucrative, and then continued to present a couple of the many problems a firm could face, and also presented estimates of just how much the contract costs could increase if a firm did not plan well ahead of these additional costs.

In chapter 5 some of the hidden costs were analyzed using microeconomic theory, auction theory, basic contract theory and theory of industrial organization. This to give a more solid and thorough understanding of these problems and show that economic theory is practically applicable on many aspects of the offshore outsourcing phenomenon.

Offshore outsourcing is a rather new concept, but has garnered much attention and more than one company produces reports on how profitable it is, how to do it properly and what problems and gains it can cause society. Hopefully this paper can stand as a good introduction to the subject, and show the use of proper economic theory for understanding the do's and don'ts of offshore outsourcing.

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