Information Technology Outsourcing in Emerging Markets

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ABSTRACT

Information Technology (IT) firms can better differentiate themselves and achieve improved profitability through IT outsourcing business. This can be explained by using Hax and Wilde's Delta Model. Several IT firms have successfully achieved these objectives in well-developed countries. However, this thesis argues that developing successful IT outsourcing business in emerging markets cannot be achieved simply by replicating previous experiences in well-developed countries, as IT outsourcing is greatly influenced by the cultural factors and the macro environment of the local markets.

This thesis discusses the factors through two perspectives. The first encompasses the factors influencing a firm's decision whether or not to outsource its IT functions. Those factors can be categorized into five different concerns: financial, resource, strategic, managerial, and cultural. The second perspective focuses on the eight critical factors for IT outsourcing projects to be successful, four inside and four outside the firm. For emerging markets, we use Michael Porter's Diamond Model to analyze how IT outsourcing business is influenced by the environment in which it is operating.

To give an example of an emerging market, we have studied IT outsourcing business in China. We have conducted in-depth interviews locally with a variety of IT firms and corporate customers, and applied once more Michael Porter's Diamond Model to analyze our findings. This thesis identifies the market segments and reviews the critical success factors in each of them, and concludes with recommendations to IT firms on strategies for the IT outsourcing business development in China.

Thesis Supervisor: Gabriel R. Bitran
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We would like to thank Professor Gabriel Bitran and Hewlett Packard for making this research opportunity possible, and to Mr. Victor Tang for his thoughts that have enriched our research.

- Kenny Liao and Luis Reátegui

I would like to dedicate this work to my mother Norma, for her endless support and to my father, Lucho, in memory. To Paulo and Renato I thank for being at my side in every important moment of my life.

- Luis Reátegui

I would like to dedicate this work to my beloved wife and children, my parents, and my parents-in-law for their endless support and sacrifice to encourage me pursuing my sometimes outrageous dreams, and to my uncle in memory for being the finest model of my lifetime.

- Kenny Liao

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1. Introduction

The United States has been in the forefront of the information technology (IT) industry since its inception. The success of US companies in selling hardware and software in the international market has been achieved by replicating its technologies, processes, and business models with a small degree of localization, such as document and user interface translation. However, will US companies be able to extend this success into IT outsourcing business internationally in the same way? Is IT outsourcing a viable business proposition in emerging markets? When companies are making decisions of sourcing IT equipment and services, what factors will influence their decisions? Are the decision factors in the US different from those in emerging markets? If so, how different are they and in what way? We will attempt to answer these questions with this thesis, and in the same time, we will analyze the IT outsourcing market in China as a very important example of emerging markets.

1.1. Definition of Emerging Markets

For the purposes of this paper, we will use emerging markets following the World Bank's definition of low and middle-income countries. As its latest Regional Economic Prospect Report states, "World Bank's main criterion for classifying economies is gross national income (GNI) per capita. Every economy is classified as low income, middle income...or high income...Low income and middle-income economies are sometimes refereed to as developing countries...The groups are: low income, US$755 or less; middle income US$756-9,265; and high income, US$9,266 or more."[1]

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[1] World Bank. Global Economic Prospects and the Developing Countries. 2002.

Another notion used in this paper will be to concentrate on the "big emerging markets in the world today."[2] These are China, India, Indonesia, Brazil and Russia. We will draw examples from some of these countries, especially China, India and Brazil, in an effort to give the broadest possible view on the situation of IT and IT outsourcing in emerging markets.

1.2. IT Outsourcing and Emerging Markets

American companies have a long history of IT outsourcing, though it has only become a popular topic in the last decade. The IT outsourcing market has been growing steadily in the US. As a report of the Gartner Group indicates, "[t]he percent of IT services in North America purchased using the outsourced method will increase from 54% in 2000 to 59% in 2005."[3] This growth behind the continuous increase in usage of outsourcing over discrete or project-based purchasing of IT services is driven by both short-term and long-term factors. In the short-term, there is a need to reduce costs due to the current economic decline, and in the long-term outsourcing increases the capabilities of delivering access to new technology solutions through IT utility or access services, such as hosting. This trend of IT outsourcing is also seen in different countries around the world including some emerging markets, but they may be at different stages. This is the case not only because of different macroeconomic realities but also because of cultural, social and political differences.

The US experience in IT outsourcing has been a topic of extensive analysis and much has been written about it. It is our view that there is a lack of analysis of the underlying forces of IT outsourcing with an international perspective, especially for the emerging markets, as well

[2] Dornbusch, Rudi. China: A Beginner's Guide. Essays 1998/2001. August 1998.
[3] Caldwell, Bruce. IT Outsourcing Services Growth Continues in North American Market, Gartner Group, Nov. 14, 2001.

as of how each of these forces interact in environments inherently different from the US. We have noticed a tendency in many companies to use the US perspective and examples as a basis for analyzing opportunities and strategic positioning in other countries. Such an indiscriminate application of the American experience to emerging markets can introduce a high risk of failure, as the use of the US perspective is not necessarily the best for other countries.

We will bring our perspective of the fundamental forces driving companies' IT in-sourcing/outsourcing decisions and discuss whether and how they are different in the emerging markets. We will also use China as an example for our study. The use of a recently developing country is important because the rate in which these countries will progress with IT outsourcing will be significantly different than that in mature markets. The strong interest in China these days is another reason for the use of this country since the conclusion drawn by this thesis may help IT vendors in their analysis of the Chinese market.

1.3. Overview of Chapters

We will start by discussing varieties of scopes of IT outsourcing in Chapter 2. Because the term IT outsourcing has been used without much consistency, this chapter will provide the definitions of the term IT outsourcing that will be used in this thesis.

In Chapter 3, we will lay out the underlying factors driving corporate IT outsourcing/in-sourcing decisions, and discuss each of them. A discussion of these factors is important since it is the basis to compare the similarities and differences between the US and emerging markets.

In Chapter 4, we will use Arnoldo Hax and Dean Wilde II's Delta Model[4] to discuss the strategic choices that IT vendors and service providers have and the reasons supporting the view that IT outsourcing business can be much more profitable in the long run.

In Chapter 5, we will introduce emerging markets to our discussion of IT outsourcing. Michael Porter's Competitive Diamond[5] analysis will be used to develop and explain that to sustain a competitive advantage in IT outsourcing, firms need to understand the role of the different stakeholders in each market. This framework will provide us with a rationale to analyze the need for a differentiating strategy to deal with IT outsourcing in emerging markets.

Finally in Chapter 6, we will focus on the Chinese market. The use of China as an instance of an emerging market will give a practical example of how to apply the framework developed throughout the thesis. Another purpose though is to use the example of a developing country where the forces of the framework are more easily identified. We will conclude the thesis with recommendations for IT vendors in their drive to enter the Chinese market.

[4] Hax, Arnoldo and Wilde II, Deal. The Delta Project. Palgrave. New York, NY: 2001.
[5] Porter, Michael. The Competitive Advantage of Nations. The Free Press. New York, NY: 1990.

2. Defining IT Outsourcing

2.1. Basic Definition

One of the problems of outsourcing has been that there is not a clear definition of the term

and there are various views in the extent of activities it covers. The term outsourcing has

been commonly used by the market players to encompass a diverse range of services. It's

not in the scope of this paper to perform a deep analysis of the definition of outsourcing but

instead to build from these definitions and try to understand the forces that interact in this

process. A common definition of outsourcing is provided by Mike Johnson: "[o]utsourcing:

by this we mean contracting out of any service by the IT department (read whatever

department you like here), which could range from having all of your development,

maintenance, and operations performed for you (on a system that could be on your premises

or the vendor's) to simply contracting an outside supplier to perform one single, simple task

such as to write a program or install a piece of software."[6] Another definition is provided by

the Gartner Group[7]: "[o]utsourcing – Annuity-based contractual arrangement that details

how an organization will provision services on an ongoing basis at a specified level of

competency...Outsourcing arrangements usually last between two and five years, but may be

shorter or longer. Outsourcing includes IT infrastructure and business processes. Outsourcing

agreements always include services from the management category, transaction processing or

business management segments and may include services from the product support,

consulting, development and integration, or education and training. As part of an outsourcing

agreement, the external service provider may either take over the physical assets and

infrastructure of a client or may provide access to existing infrastructure owned by the

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[6] Johnson, Mike. Outsourcing in Brief. Butterworth-Heinemann. Oxford, England: 2000.
[7] Caldwell, Bruce. IT outsourcing Services Growth Continues in North American Market, Gartner Group, Nov. 14, 2001.

outsourcer." Following in the same Gartner Report there is an even broader definition:

"[o]utsourcing services can be viewed as a portfolio of product support and professional

services that are brought together to provide the client with the IT infrastructure,

applications, capabilities and business processes to help ensure the successful mission of the

organization."

The evolution of outsourcing has grown from a simple means to only provide a more cost-

effective operation to today's Internet model where speed and skills are at least as important

as costs. As can be seen in Figure 1, ownership of technology is no longer the end for

corporations but the capability to provide IT functionality with a broad range of service

provider models.
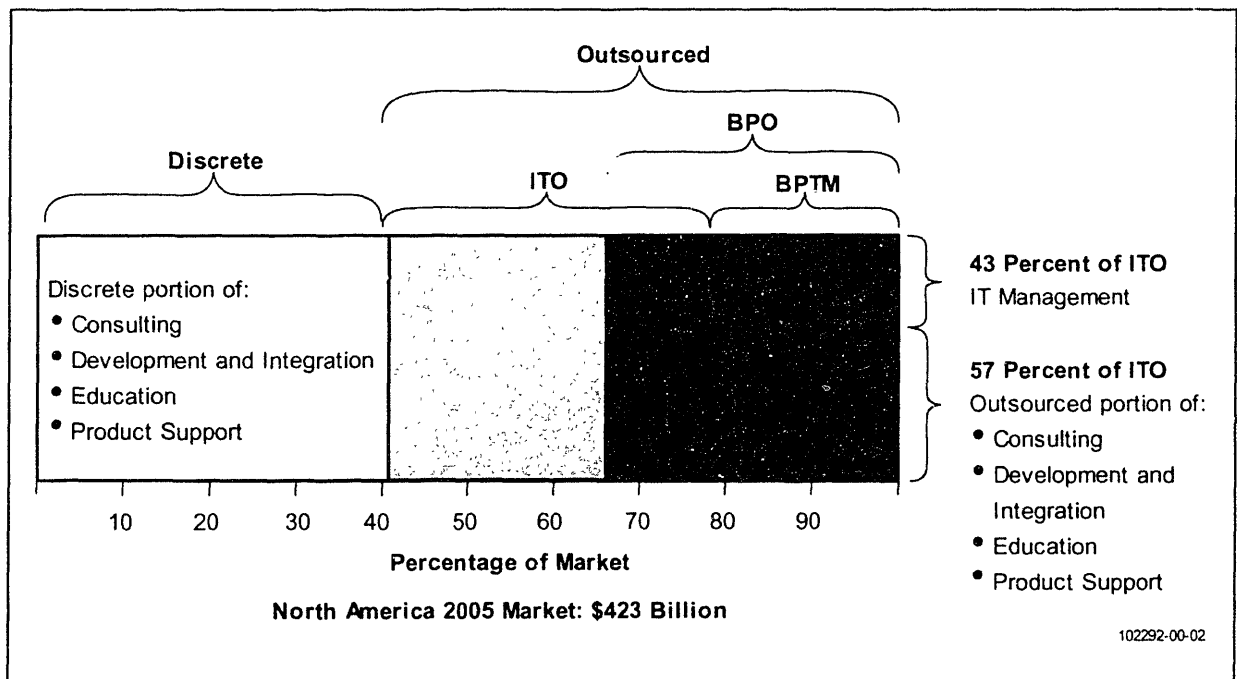
Source: Gartner Dataquest (November 2001)

Figure 1: IT Services Market Segments

As can be seen from the several definitions above, outsourcing is a term in constant evolution and to understand this is of great importance when in search of the forces that are involved. The development of outsourcing is a reflection of a combination of the needs of companies to achieve business goals and satisfying customers while benefiting from current technology. Understanding the business goals of corporations and where IT outsourcing adds to them is one of the objectives of this paper.

2.2. The Scope of IT Outsourcing

The purpose of business information systems is to serve business functions. For example, the information systems in a trading company may include different applications such as procurement, stock management, sales and marketing, online trading, accounting, human resource, decision support, company web site, e-mail and so on. For these systems, besides the hardware and system software platforms they are running on, typically there is a layer of networking platform to perform the communication with other components or other systems inside or outside the company, and application software to service the business functions. For these sets of the hardware, software, and networks to function properly and reliably, certain system operation tasks must be performed regularly such as system maintenance, system back up, housekeeping, user administration, and so on. On top of all these, there are users (typically company employees) who operate the systems through the user interfaces to perform business functions and turn their productivity into results. This is what we call business operations. A typical example of business operation is an airline company's customer service representative operating the booking system to make reservations for customers, or an employee in accounting depart using the accounting system for book

keeping. These business operations are all performed under the guidelines of the business strategies defined by the company management.

To make the above discussion easier to understand, we have laid out an example of the structure of business information systems as Figure 2. This can also be used as a tool to discuss the scopes of IT outsourcing.

Application Systems Servicing Business Functions

	Trading and Stock Management	Human Resource	Accounting	• • • • • •	Decision Support
Business Strategy					
Business Operation					
System Operation					
Application Software					
Network Platform					
System Software Platform					
Hardware Platform					

Information System Layers
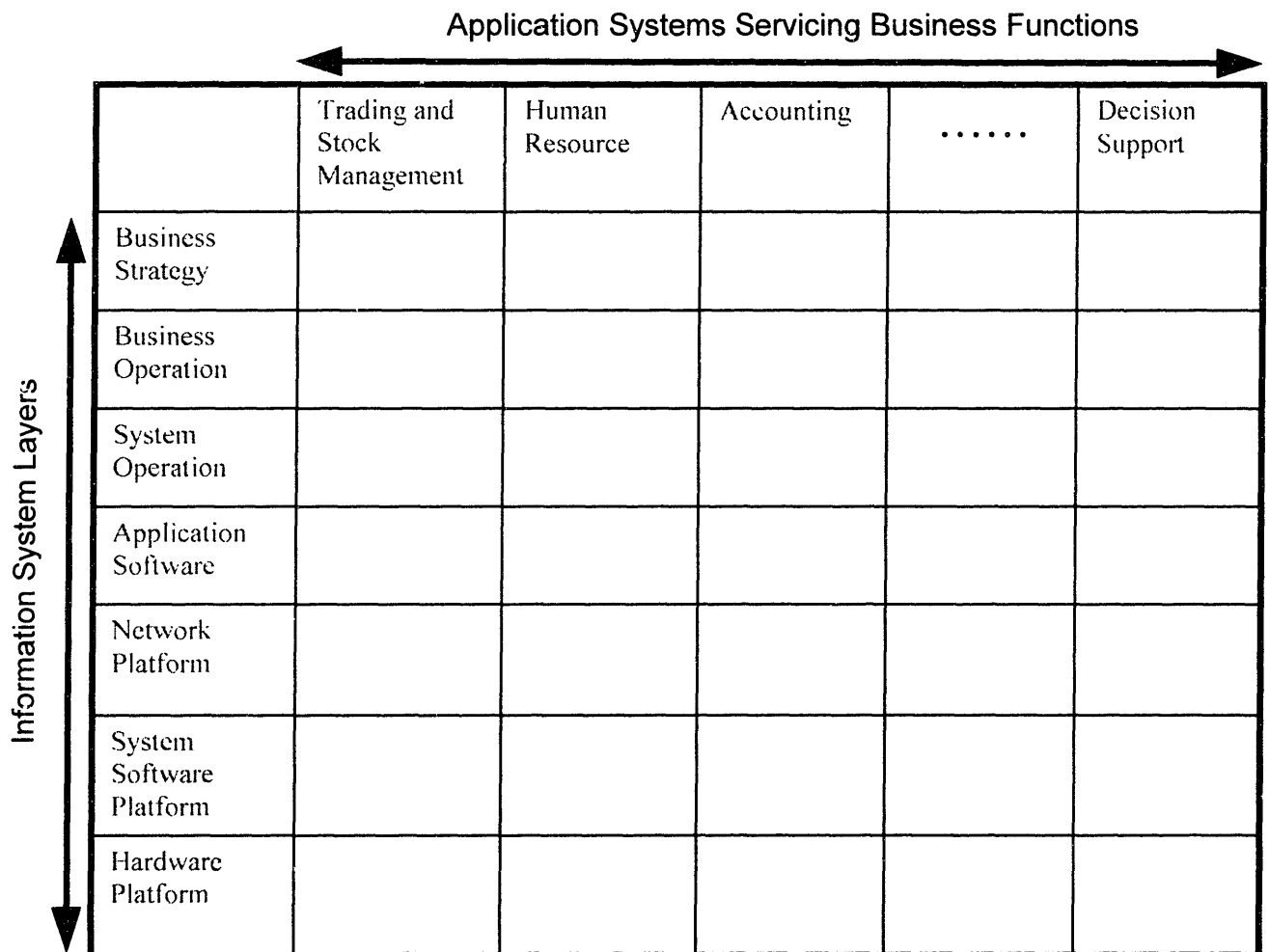
Figure 2: IT Outsourcing Definition Framework

Different outsourcing projects may cover different scopes. For example, there are large cases of IT outsourcing projects in which a company outsource almost the entire IT department to

third parties.[8]   In these cases, the outsourcing party may sell all its IT assets (such as hardware and software) to the outsourced party and lease them back. Most of the IT employees may leave the outsourcing party and join the outsourced party and still provide the same service to the same company.

In contrast to total IT outsourcing, selective outsourcing is to outsource only selective layers of selective application systems to third parties. Other scopes of IT outsourcing may include network outsourcing, in which a company outsources its networking environment to a third party to operate and maintain. Desktop outsourcing is to have a third party take the responsibility for the maintenance of all the desktop environments such as personal computers (PCs). Business process outsourcing is to outsource the entire process of a function to a third party, which includes its business operations as well as the information systems. It is important to note that in some discussions[9], business process outsourcing is separated out from the scope of IT outsourcing. However, in this thesis, when we mention IT outsourcing, business process outsourcing is also included. Figure 3, Figure 4, and Figure 5 show how we use the previously mentioned framework to illustrate IT outsourcing, including business process outsourcing.

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[8] Lacity, Mary C. and Hirschheim, Rudy. Information Technology Outsourcing. Rethinking Management Information Systems. Edited by Wendy Currie and Bob Galliers. Oxford University Press, New York, NY: 1999.

[9] See Chapter 5 of IT Services Market Definition Guide. Gartner Group: 2000.

Application Systems Servicing Business Functions

	Trading and Stock Management	Human Resource	Accounting	......	Decision Support
Business Strategy					
Business Operation					
System Operation					
Application Software					
Network Platform					
System Software Platform					
Hardware Platform					

Information System Layers

Figure 3: The Scope of Total IT Outsourcing

Application Systems Servicing Business Functions

	Trading and Stock Management	Human Resource	Accounting	. . . . . .	Decision Support
Business Strategy					
Business Operation					
System Operation					
Application Software					
Network Platform	Network Outsourcing				
System Software Platform	Desktop Outsourcing				
Hardware Platform					

Information System Layers

Business Process Outsourcing

Figure 4: Examples of IT Outsourcing Scopes (Inc. Business Process Outsourcing)

	Trading and Stock Management	Human Resource	Accounting	. . . . . .	Decision Support
Business Strategy					
Business Operation					
System Operation					
Application Software					
Network Platform	▨		▨		▨
System Software Platform		▨			▨
Hardware Platform		▨			▨

Information System Layers
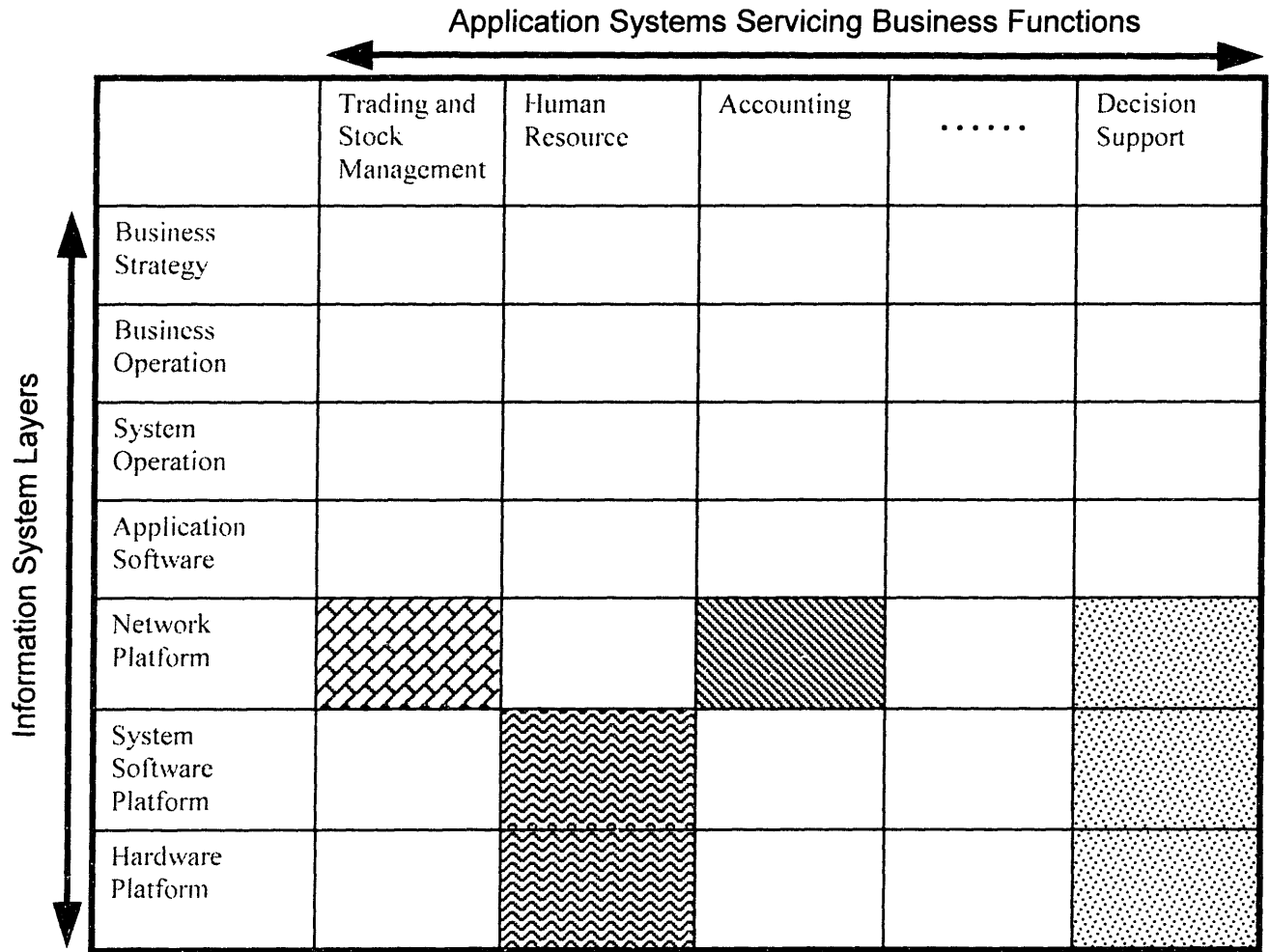
Figure 5: Examples of Selective Outsourcing Scopes

3. Factors Influencing IT Outsourcing Decisions

In this chapter we will discuss the forces that influence IT outsourcing decision of companies. These forces are seen in both the developed world and in emerging markets. For different companies, the importance of each factor can change depending on the industry and the country it is operating in, as well as how critical IT functions is to the company. We hereby describe a comprehensive set of forces that can be applicable to both developed world and emerging markets.

The question most senior managers have been discussing is whether to outsource or in-source the company's IT needs. There is no single formula or a set of universal rules to find the right answer to this question. Although there are many factors that may influence the decision of IT outsourcing, either in favor of in-sourcing or outsourcing, they can be described in five broad categories:

- Financial Concerns

- Resource Concerns

- Strategic Concerns

- Managerial Concerns

- Cultural Concerns

All of these broad categories involve a series of forces that work either in favor of outsourcing or in favor of in-sourcing. It is the interaction of these forces that finally molds management's decision to outsource or not. We will develop these broad categories and describe the forces that work in favor of outsourcing or of in-sourcing. Each of them will be described in following sections. We will first start with the forces that favor outsourcing and

will continue with a discussion of the forces that work against it. We will be using examples of actual cases to illustrate these forces. At the end, we will draw conclusions as to how these forces act. We will also define the eight critical factors of successful implementation of IT outsourcing.

3.1. The Factors in Favor of IT Outsourcing

3.1.1. Financial Concerns

The first factor in favor of IT outsourcing that we will analyze is the aspect that encompasses financial justifications. This can involve the need for cost reduction, financial performance index improvements, cash flow improvements and leveraging suppliers' financial strengths.

3.1.1.1. Cost Reduction

Cost reduction is one of the most important factors in favor of outsourcing. This can be seen from several sources, such as the Outsourcing Institute survey in which cost saving was rated as the top reason for outsourcing.[10] In another study, Lacity and Hirschleim,[11] also confirmed the importance of cost saving, "[m]any participants expected that outsourcing would save them money...in particular, participants believed that a vendor's unit costs are less expensive due to mass production efficiencies and labor specialization."

There is especially a need when a certain resource (either human or equipment resources) is not needed fulltime, or the efforts to obtain the resource cannot be justified. For example, in a medium-size business with a reasonably simple network

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[10] Outsourcing Institute. Outsourcing Index 2001. New York, NY: 2001.
[11] Lacity, Mary C. and Hirschheim, Rudy. Information Technology Outsourcing. Rethinking Management Information Systems. Edited by Wendy Currie and Bob Galliers. Oxford University Press, New York, NY: 1999.

across a few locations, the technical expertise of routers configuration and maintenance is needed occasionally. The cost of hiring and training a network engineer who is competent in router configuration is too high to justify this occasional need. It will be beneficial for the company to outsource this task since the cost of the external resource from a third-party will be shared by other companies with similar needs, and the outsourced company can still have a buffer to make a profit.

The benefit of outsourcing becomes more significant when we are calculating the total cost of ownership (TCO) of information systems, while the operating overhead of business is ever increasing. Wages only count as a portion of TCO of information systems. There are other significant costs, such as office space, office equipment, hardware, software, etc. Like management accounting, the estimation of TCO of information systems is more of an art than a science.[12] A professional firm in the business of IT outsourcing can often provide the services at a relatively lower TCO achieved through not only resource sharing but also increased operation efficiency due to specialization and efficient knowledge sharing.

3.1.1.2. Financial Performance Index Improvement

In many cases, especially total IT outsourcing, the outsourcing party often sells all the IT hardware and software to the outsourced party and lease them back. Also a significant number of the IT employees may be transitioned to the outsourced company. In these cases, there is a reduction of both total assets and employee

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[12]Quoted from Larry Weiss's lectures to MIT Sloan Fellows Class of 2002. "Management Accounting is more of an art than a science."

headcount for the outsourcing company; hence, some financial index, such as Return on Assets and Productivity per Employee, will improve significantly. This can be a motivation for corporate executives to choose IT outsourcing.

An example of this was the contract between British Aerospace (BAe) and Computer Science Corporation (CSC) in 1994.[13] This deal involved a 10-year, £ 900 million contract for providing all the IT services for data centers, networks, distributed computing and applications. It also involved the selling of all IT assets to CSC for £ 75 million and the transfer of 1450 BAe employees. BAe was undergoing financial problems and the strategy to divest its non-core business created the momentum for this deal.

3.1.1.3. Cash Flow Improvement

For the same reasons as described in Section 3.1.1.2, a reduction in assets and headcount can also improve cash flow; in some cases, it may result in new investments, internally or externally. This creates an important internal force to outsource, particularly when the companies face financial difficulties.

However, the problem with this move though is that it is more a perception than a reality. In a survey published by the University of Oxford,[14] of the 600 US and UK Chief Information Officers (CIO) and senior IT managers interviewed the vast majority stated that in only 10% of the cases it actually helped cash flow problems.

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[13] Lacity, Mary C., and Willcocks, Leslie P. Global Information Technology Outsourcing: In Search of Business Advantage. John Wiley & Sons, Ltd. West Sussex, England: 2001.
[14] Inside IT Outsourcing: A State-of-the-Art Report. University of Oxford. Oxford, England: March 2000.

3.1.1.4. Leveraging Financial Strengths

For some companies that do not have strong enough financial backup or credit rating, making a new major IT investment may be difficult due to the high cost of capital. With IT outsourcing, a company may leverage the financial strength of an outsourced company if it has a solid financial basis or good credit rating. This is especially useful for small and medium-size business or start-up companies.

3.1.2. Resource Concerns

The second broad category we will discuss has to do with the need to leverage external core competencies. This involves using IT outsourcing to tap onto external expertise and technologies and the fact that companies tend to concentrate their efforts on its own core competencies.

3.1.2.1. Access to External Expertise and Technologies

The rapid changes of information technology never stop. It is hardly possible for most of the non-IT companies to keep their internal resources always up-to-date with the latest technologies, nor does it make sense. With IT outsourcing, companies can have access to external resources that have the skills needed. As described in Section 3.1.1.1, this can be very cost-effective due to specialization and share of resources.

An example of this was the South Australian Government decision in 1997, to outsource all the government IT needs and investments. The AU$ 600 million, nine-year contract with EDS, had the unique characteristic that it had two components: one component was the traditional service provisions for the South Australian Government agencies and the other was the development of South Australia's

economy. The South Australian government wanted to use the expertise of a major IT supplier (in this case EDS) to develop as an international center of excellence for IT in the Asia/Pacific region. As an official of the South Australian government says,[15] "[o]ur strategy for outsourcing, if you distill it all down, had two thrusts. One was to improve the effectiveness of the use of our computing infrastructure, lower cost, higher quality, and shift management focus to the business and end-use. On the other side, we wanted to build a critical mass of IT industry leaders by attracting global players. So we needed a deal big enough to attract them."

3.1.2.2. Limited Resources

Being "lean and mean" is an unavoidable trend of today's business. With limited resources, companies need to focus on their core business rather than putting a lot of resources in its IT division. However, given the important role that IT plays in today's business infrastructure, companies cannot disregard any IT aspect. IT outsourcing becomes then the solution to this problem. Indeed, the survey by the University of Oxford[16] states that 32% of IT managers and CIOs in the US and the UK agree that IT outsourcing helps their company focus on their core business.

3.1.3. Strategic Concerns

The third concept relates to the strategic impacts the decision to outsource IT can have on the company. These forces are less noticeable for the company as they involve special situations such as a merger, a major business transition or a perception that the IT strategy is not aligned with the company's strategy.

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[15] Lacity, Mary C., and Willcocks, Leslie P. Global Information Technology Outsourcing: In Search of Business Advantage. John Wiley & Sons, Ltd. West Sussex, England: 2001.
[16] University of Oxford. Inside IT Outsourcing: A State-of-the-Art Report. Oxford, England: March 2000.

3.1.3.1. Mergers & Acquisitions and Business Transitions

Mergers and acquisitions happen very often in today's business world. The complexity of managing a merger is overwhelming and the integration of information systems makes the situation even worse. There are many benefits to outsource IT functions in this process. Not only will it ensure the availability of IT human resources during the very unstable time of a merger, but also it can bring in expertise in the inter-operation of heterogeneous systems to speed up the process of integration. There are other important benefits, such as minimizing the risks of having unhappy IT employees who are facing career uncertainty.

A similar situation can be seen when the company is undergoing a major organizational change. Some types of transitional outsourcing can be used. This involves some form of temporary outsourcing while the company undergoes the necessary changes. Other examples of this include new business start-ups and privatizations.

In Lacity and Willcocks we find several examples of this:[17]

- The case of British Gas, which in 1995 outsourced all its data centers for 18 months while it prepared for its privatization.
- In 1995 Elf Alochem signed a four-year outsourcing with Keane of its accounting system while Alochem's internal staff migrated applications to client/server.

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[17] Lacity, Mary C., and Willcocks, Leslie P. Global Information Technology Outsourcing: In Search of Business Advantage. John Wiley & Sons, Ltd. West Sussex, England: 2001.

- In 1995 Owens-Corning Fiberglass signed a contract with Hewlett-Packard to maintain the legacy systems while Owen Corning IT staff implemented SAP in 75 sites worldwide.

3.1.3.2. Reduction in Project Delivery Lead-time

IT plays a major role in modern business infrastructure. In a project involving the delivery of new products or services to the market, the IT systems implementation is very often seen to be in the critical path of the entire project plan. Outsourcing external IT resources can often bring in extensive experience in similar projects to shorten delivery time. In some cases, it is even possible to find external services for the function that can be delivered almost immediately.

3.1.3.3. Business Focus Enhancement

It is very common to hear CEOs ask "Are we in XX business or IT business? Why do we have such a big IT division?" Outsourcing IT can often help a company to focus most of its employees on its core business. It may also help teaming and operating efficiency with enhanced team focus.

3.1.3.4. Ease of Globalization

A successful IT outsourcing case often means most of the procedures have been properly standardized and documented. This will make it easy to replicate when new branch offices are opened in other locations, domestically or internationally. This is particularly helpful when the outsourced party also has a branch office in the new location. Most, if not all, of the model can be replicated with minimum lead-time. Actually, IT outsourcing is best performed in the case of a new branch office being

opened overseas, where company resources are limited but needs cannot be compromised. This is also an important reason why in Sections 6.2.2.2 we will recommend IT firms to start IT outsourcing business in China from the Foreign-Invested Enterprise market segment.

3.1.3.5. Strategic Partnership

Sometimes IT can be outsourced to form or enhance a strategic partnership. The example of company spinning off its IT division into an independent company makes the IT entity behave like a supplier. Free from the restraints that come from being in a support function or a cost center, the new entity can focus on delivering good customer service at competitive prices. General Motors and EDS or NV Phillips and Origin are good examples that successful spin-offs can be achieved. Another example such as American Airline's Sabre unit (reservation system) proves also that successful spin-offs are "only successful if they have a core competency to attract external customers."[18]

The sharing of risks and rewards can be another force into strategic partnerships. The innate discussions of the supplier trying to maximize profit by charging excess fees and the customer's need to try to squeeze extra benefit by getting as many services as possible can be reduced by buying each other's stock. This can take the format of suppliers buying their clients' stock, clients buying the suppliers' stock or forming a new corporation with proportionate ownership.

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[18] Ibid.

An example of this is the deal between Swiss Bank and Perot System signed in 1996. The bank acquired 25% of Perot Systems while Perot acquired shares from a subsidiary software company of the bank. Other examples include:

- The joint venture in 1998 between IBM and Daiwa Bank of Japan.

- Lend lease of Australia outsourcing its information systems to ISSC and taking 35% of ISSC Australia.

- The 50-50 partnership between Delta Airlines and AT&T (NCR) that created TransQuest to provide IT solutions to the travel industry.

3.1.4. Managerial Concerns

Managerial concerns are of extreme importance in the decision of outsourcing. The ease of performance measurement and the possibility of creating competitive environments are major forces that encourage the decision to outsource.

3.1.4.1. Ease of Performance Measurement

Delays in IT projects are almost seen as a norm. Managing an IT division can sometimes be a headache for corporate executives. With IT outsourcing, project deadlines and objectives can be written into a legal contract. Management can then simplify its task to supervising the execution of the contract. If any delay or problem happens, the outsourced party can sometimes compensate these problems in the project with penalty payments. Given these constraints, the outsourced party will make great efforts to meet deadlines and objectives. However, it takes a lot of wisdom to negotiate a win-win contract, which is a must for a successful long-term mutual partnership.

Most IT outsourcing deals involve a big number of contracts that are also known as Service Level Agreements (SLA). These SLA's are detailed agreements necessary to create contractual service obligations. The capability of developing comprehensive SLA's permitted the outsourcing project to have a better chance of success. As Lacity and Willcocks mentions,[19] "[o]rganizations that failed to detail SLAs regretted the decision, leading to accusations of declining service and even supplier incompetence".

As in the case of BAe and CSC (see Section 3.1.1.2), the existence of detailed SLAs was of utmost importance. The relationships require a big amount of trust and issues were settled in a financially neutral way. Without a clear understanding of each other's obligation, cases such as this long-term contract would tend to fail, especially in the more tense transition years.

3.1.4.2. Creating Positive Competition

If managed properly, outsourcing part of the IT function can create an environment for internal IT resources to become more competitive. However, both "sticks and carrots" need to be used wisely to make sure the competition remains positive.

Outsourcing to more than one supplier can also create a positive competition. This was seen in 1997 when DuPont signed 10-year contracts worth US$4 billion with CSC and Andersen Consulting (AC). Different from other contracts the DuPont deal had no primary contractor as it signed separate contracts with the suppliers. Although there can be some loss of integration and coordination (which a prime contractor

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[19] Ibid.

could ensure), by pitching the suppliers against each other ensures that AC and CSC rely on mutual dependencies on functions that overlap. This happens because in some projects they depend on each other for infrastructure support and this role changes all the time therefore ensuring their total cooperation. As a DuPont manager stated,[20] "[a]nd because of the integration of our supply chains, you are always going to have a situation where there's going to be some Andersen interfaces with CSC, and CSC interfacing with Andersen…so they both need each other to be successful and if they try to [hurt] each other, it just won't work, because the [hurt] guy will just get even on the next transaction." On new projects CSC and AC compete with each other.

3.1.5. Cultural Concerns

The last broad concept is related to the culture of the country. Although this can be seen as a minor force, in certain countries this force can grow in importance. In many countries the feeling of standing in the forefront is important. A new fad or business process that becomes popular can create a positive momentum in other companies to implement it. Partial or even full IT outsourcing has become popular in many leading companies in developed countries. It is thus seen as a trend to pursue by many people. By announcing IT outsourcing projects, a company may often create an image to its stakeholders that it is aggressively improving its operation efficiency, hence building the expectation of lowered cost and stronger profitability in the future.

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[20] Ibid.

3.2. The Factors in Favor of IT In-Sourcing

We will now discuss the forces that work to keep IT matters in-house. The five broad categories already discussed also apply to these factors.

3.2.1. Financial Concerns

As mentioned in Section 3.1.1.1, cost reduction has been seen as the most popular reason for companies to go for IT outsourcing in the United States. On the other hand, corporate management and stakeholders will ask for proof of saving after outsourcing. The problem in many cases is that the TCO calculation are often unclear before outsourcing, thus the number of dollar saving after outsourcing is not convincing.

Another point needs to be mentioned regarding the difficulty in calculating the actual savings of an IT outsourcing contract is the fact that the scope of the project usually changes as it progresses. This makes it hard to establish cost savings benchmarks in the contracts. As Lacity and Willcocks mention,[21] "[i]t is very difficult to rely on initial cost objectives because volumes and the composition of IT services during the contract dramatically differ from baseline volumes and composition." In outsourcing deals involving government entities, this problem is higher as the participants are expected to perform projected cost savings for the taxpayer.

An example of this was the deal between the Inland Revenue of UK and EDS. The deal signed in 1993 was a £ 1 billion, 10-year contract, which was the biggest outsourcing ever awarded in Europe at that time. The 'constant volume' model of assessing cost savings became a pure accounting gimmick since the Inland Revenue passed through

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[21] Ibid.

several tax reforms which changed completely the amount and scope of services to be provided during the life of the contract.

3.2.2. Resource Concerns

3.2.2.1. Loss of Control

The debate of what to outsource in a company is always tightly linked to the concerns of loss of control. It is more than purely a psychological issue and the nightmare can sometimes come true. It is the most typical reason why many people refuse to outsource the mission-critical portion of its information systems. Yet, a carefully designed contract with professional execution can reduce the risk.

3.2.3. Strategic Concerns

3.2.3.1. Difficulties in Finding Good Partners

Finding the right partner is recognized as the most critical task in an IT outsourcing project,[22] but it is not an easy one at all. Sufficient experience in similar projects is seen as the most important criteria. It is hard to find a partner who can fulfill all the conditions such as experience, expertise, industry knowledge, financial stability, quality of service, no conflict of interests and at a reasonable cost. In many cases, companies try to resolve this issue by doing selective outsourcing to different parties who have different backgrounds, expertise, and interests.

3.2.3.2. Confidentiality

Confidentiality is a significant issue when considering outsourcing. Though almost every contract has terms of confidentiality spelled out, the execution and audit are always difficult. Even if the contract can be written to be as comprehensive as

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[22] Outsourcing Institute. Outsourcing Index 2001. New York, NY: 2001.

possible, the outsourcing party may always be concerned about whether and how infringement can be detected.

This has been an important issue with the contract between Inland Revenue and EDS mentioned above (see Section 3.2.1). The perceived risk of breach of confidentiality in the collection of taxes and the threat of theft was used by the opponents of outsourcing. In public sector companies, the forces against outsourcing to a private company are stronger than in private corporations.

3.2.3.3. Support of Legal Systems

Legal systems are the last line of protection for any contract. However, the complexity of IT outsourcing often makes legal protection hard to perform. It is almost impossible for contracts to define all details of every possible case. Also, lawsuits can take years before any judgment can be made. In some emerging markets, the lack of mature and reliable law systems make the concerns even greater.

In Lacity and Willcocks[23] this point is highly stressed, "[n]o matter how detailed the contract...is always open to interpretation...during the transition phase, customers and suppliers are each motivated to take a hard stand on contract interpretations ..."

3.2.3.4. Permanent Loss of Ability

Once a function is outsourced, the outsourcing party will minimize its resource allocation in the area and leave the outsourced party to take care of the function. It is sometimes a concern of corporate management whether the company will permanently lose the ability eventually. Unfortunately, the answer is close to

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[23] Lacity, Mary C., and Willcocks, Leslie P. Global Information Technology Outsourcing: In Search of Business Advantage. John Wiley & Sons, Ltd. West Sussex, England: 2001.

positive. If a company wants to bring back a function that has been outsourced for several years, it will take significant efforts to regain the ability. Actually, this concern is more of an issue at the beginning when deciding what to outsource.

3.2.4. Managerial Concerns

3.2.4.1. Difficulties in Defining Specifications

A set of clearly defined specifications, requirements, and procedures is a key element in IT outsourcing contracts. However, these are not always clearly defined in companies. For any company that wants to go for IT outsourcing, this is the homework they need to do at the very beginning. Sometimes the lack of expertise in defining these specifications, requirements, and procedures is the barrier that deters many companies from outsourcing. This is often an even bigger issue in emerging markets where it is rare to find companies with the required expertise to clearly define their own specifications, requirements, and procedures.

3.2.4.2. Changing Procedures and Needs

On the other hand, there are some situation when the procedures are changing so often that the set of requirements are too hard to be defined into fixed terms. This happens particularly in emerging markets where the regulations of certain industries are still under development. The ever changing government regulation will always influence the corporate procedures, hence the specifications and the contracts of outsourcing will be very hard to define.

3.2.4.3. Difficulties in Managing External Resources

After outsourcing, it can be a challenge to manage external resources. Existing managers may not have the required skills since managing external and internal resources can be different. In addition to the typical people and process management skills required to manage internal resources, managing external resources is often found to be even more demanding since it is a combination of the skills of contract management and people and process management, and power negotiation. In many cases, the firms who have outsourced their IT function found that they have underestimated the demand of management resource and expertise to remain in the company after outsourcing.

3.2.4.4. Reallocation of Existing Teams

To many of the employees, outsourcing indicates replacements and lay-offs. It is also a concern of the company deciding what to do with the existing employees. In many total IT outsourcing cases, a portion of the original IT team will leave the outsourcing party and join the outsourced party. Very often cultural shock will happen since most outsourcing parties are not in the IT industry, but the employees are moving across to an IT firm. Thus, the company culture and management styles can be very different and loss of employees is often seen in these cases. This is why reallocation of resources is always an important topic in outsourcing projects.

3.2.5. Cultural Concerns

3.2.5.1. Ownership

In some cultures, companies want to own their IT equipments and people to feel safe. This may also be related to other concerns, such as confidentiality issues or the lack

of confidence in the legal systems. This is very common in emerging markets and will be further commented in the chapters that deal with emerging markets.

3.2.5.2. Competence

In some cultures corporate management doesn't want to outsource because they think others may interpret their decision to outsource as a lack of competence on their part. This is becoming less of a concern nowadays because IT outsourcing is becoming more common and to some degree it has become a trend to follow.

In Figure 6 below we can find a summary of the forces we have been discussing.

3.3. Critical Factors and Conclusion

From the forces described above, we can conclude that there are certain minimum factors that need to exist so that the IT outsourcing process reaches some level of success. In Lacity and Willcocks[24] the definition of success can be explained as a function of the achievement of the initial expectations regarding outsourcing. The most common expectations described in the book were as being of financial reasons, business reasons, strategic reasons and technical reasons. The cases commented in this chapter provided us with the examples to develop therefore a set of common factors for a relative success of an IT outsourcing process. The existence of this set of common factors in emerging markets will be of extreme importance as to the possibility of success of IT outsourcing in those markets.

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[24] Ibid.

Factors in Favor of Outsourcing
•Financial Concerns
- Cost Reduction
- Financial Performance Index Improvement
- Cash Flow Improvement
- To Leverage 3rd Party Financial Strength
•Resource Concerns
- Access to External Expertise
- Focus Limited Resource on Core Business
•Strategic Concerns
- Merging and Acquisitions
- To Shorten Project Delivery Lead-time
- Business Focus Enhancement
- Globalization
- Strategic Partnership
•Managerial Concerns
- Ease of Performance Management
- Creating Positive Competition
•Cultural Concerns
- The Feeling of Standing at the Forefront

Forces to Move

Forces to Stay

Forces to Stay

In-sourcing   **Outsourcing**

Forces to Move

Factors in Favor of In-sourcing
•Financial Concerns
- Unclear Proof of Cost Reduction
•Resource Concerns
- Loss of Control
•Strategic Concerns
- Hard to Find Perfect Partners
- Confidentiality
- Support of Legal Systems
- Concerns of Permanent Loss of Ability
•Managerial Concerns
- Difficulty in Defining Clear Specifications
- Procedures and Needs Change too Often
- Hard to Manage External Resource
- What should I do with my existing team?
•Cultural Concerns
- Willingness to Own Everything
- Does that show my Inability?

Figure 6: The Factors Influencing IT Outsourcing Decisions

The critical factors in IT outsourcing can be defined in two ways. One is the set of factors that are internal to the company and which the company has a way to influence. The other set of factors is defined by external forces, and can be called non-market factors. These non-market factors cannot be influenced by the company and are inherent to the country in which the company operates. We will discuss further this notion of non-market factors in Chapter 5 when we apply the Porter Model to emerging markets. There are four critical factors that are internal to the company. The first is the need to have the initiation and support from top management. As one member of EDS noted about the deal with the South Australia Government,[25] "[t]he deal…would have died 1000 deaths along the way without the full support of the Premier." The second is a clear definition of needs and specification. The third is to standardize procedures both internal and regarding the relationship with suppliers. This are of extreme importance as any deal will necessarily involve hundreds of SLAs and if they are not well defined in the contracts it can arise serious discussions between the participants. The last one is the need to create and maintain sufficient expertise in-house. Even in total outsourcing deals there is a need to keep a core of people able to manage the teams, monitor the supplier performance, mediate disputes, coordinate among different suppliers and explore new dimensions to the relationship. As Lacity and Willcocks mention,[26] "[p]articipants claimed they should have kept more technical people internally…"

In addition to the four internal critical factors, there are four other critical factors that are influenced by external forces. The first one is the incentives or pressures from the environment. For example, in most of the developed countries today, corporate executives

[25] Ibid.
[26] Ibid.

are under very high pressures facing the investors and analysts to show good financial performance results every quarter. This is why cost savings has been the top reason companies outsource.[27] The second one is the need of the environment to allow for outsourcing to narrow the gap. Though there are pressures from the environment, the decision of outsourcing will only be made if it can narrow the gap between expectation and company performance. For example in China, because of the low cost of technical labor, outsourcing IT functions to well known multi-national firms will most likely increase the cost. Thus, it is very unlikely that companies will make such decisions purely for cost saving reasons. The third is mature and reliable legal systems. Due to the complexity of outsourcing contracts that may include hundreds of Service Level Agreements (SLAs), companies may not be confident enough to outsource unless they are sure the legal system is mature enough to resolve potential disputes in a fair way should they happen. The last one is the existence of mature industries to allow for standardization and specification of procedures. In some emerging markets, the regulations of certain industries are still under development, so they are often changing. It is difficult under such environments to define clear procedures and requirements to accommodate the ever-changing regulations. These four critical factors will be discussed further in Chapter 5.

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[27] Outsourcing Institute. IT Index 2001. New York, NY: 2002.

4. The Application of Delta Model in IT Outsourcing

In this chapter we will use the Delta Model[28] developed by Hax and Wilde to explain the strategic choices that IT vendors and service providers face nowadays. These choices involve understanding where IT outsourcing is positioned in the Delta Triangle. We will try to develop the idea that IT outsourcing is positioned in what the Delta Model calls "System Lock-In". Hax mentions that this is the position where significant financial premiums are achieved, providing empirical evidence and stating, "[s]ystem Lock-In businesses produce an MVA, which, on average, is over four times that of Best Product companies; Total Customer Solutions firms generate over 1.5 times the MVA of Best Product organizations."[29]

We will start by explaining briefly[30] the Delta Model and then using IBM as an example of how a company can move upwards in the value chain to achieve System Lock-In, the strategic option with the widest scope and which in an era of globalization and technological progress has the greatest possibility of long-term success.

4.1. The Delta Model

The Delta Model is one of the most recent works in strategy and tries to encompass aspects that previous strategy literature has left out. As Hax mentions in his work, the main paradigms are Michael Porter's Five Forces and the Resource-Based View.[31] The conclusion for Porter's Five Forces approach is that there are only two ways to compete that are through low cost or through product differentiation. The Resource-Based View on the other hand concentrates in the capabilities of the firm in appropriate value from resources, capabilities

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[28] Hax, Arnoldo C. & Wilde II, Dean L. The Delta Project. Palgrave. New York, NY: 2001.
[29] Ibid.
[30] The objective of this brief explanation is to build the context for the future discussion of the IBM example and not to provide an encompassing summary of the Delta Model. Any attempt to do this would demand a much broader approach and it's outside the scope of this paper.
[31] Hax, Arnoldo C. & Wilde II, Dean L. The Delta Project. Palgrave. New York, NY: 2001.

and competencies. These two views therefore lack a complete description on how companies compete in the current environment. The Delta Model enlarges the options in strategic thinking as it offers three different sources of profitability for a firm (

Figure 7). These are Best Product, Total Customer Solution and System Lock-In.

System Lock-In
(Complementor lock-in, Competitor lock-out, Proprietary Standard)

Total Customer Solutions
(Reducing customers' costs or increasing their profits)

Best Product
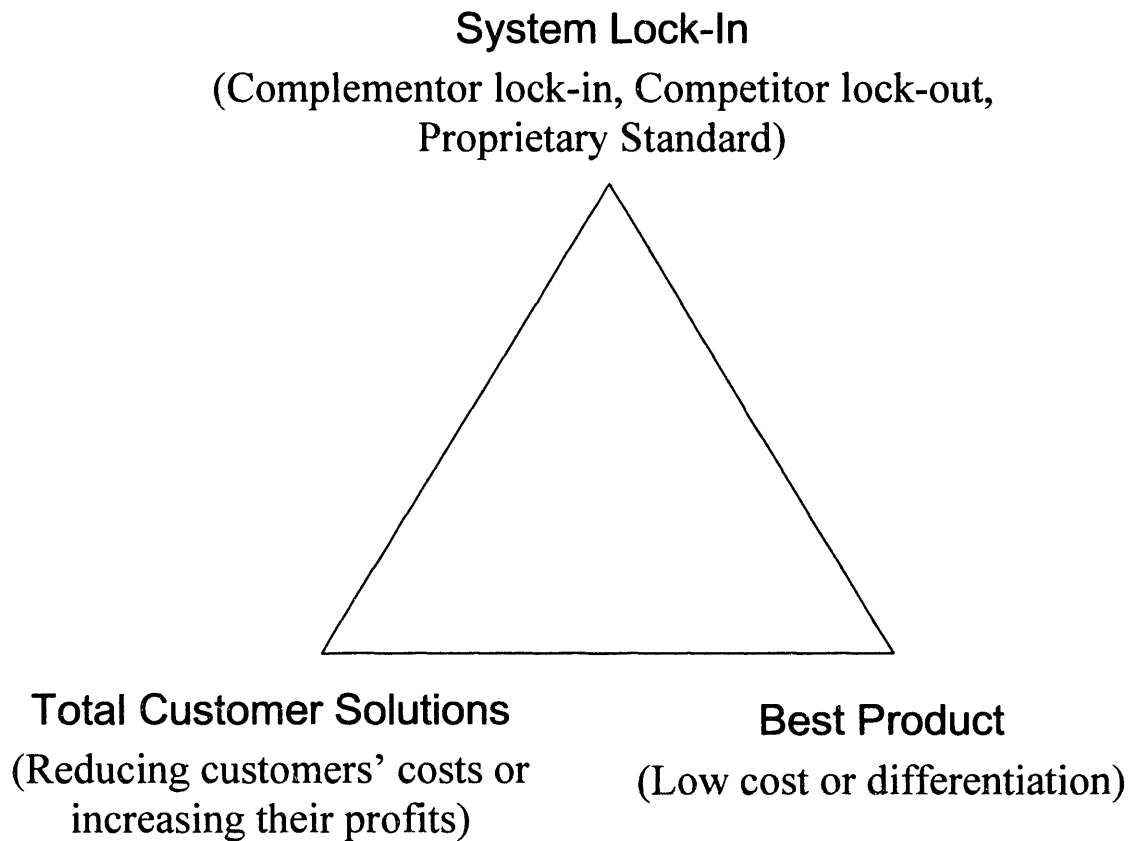(Low cost or differentiation)

Figure 7: The Delta Triangle

The Best Product position is the traditional form of competition. Customers are either attracted by price advantages or by the uniqueness of the product. The Total Customer Solution is the opposite approach to Best Product. As Hax mentions, "Instead of commoditizing the customer, we seek a deep customer understanding and relationship that

allows us to develop value propositions that bond to each individual customer."[32] The last

corner of the triangle, System Lock-In, is the strategic option that has the broadest impact in

customer relationship and includes the extended enterprise.[33] We will see later in this

chapter that a successful IT outsourcing vendor should position itself in this corner to achieve

a long-term competitive advantage.

4.2. The IBM Example

4.2.1. Best Product and Customer Total Solution

IBM is one of the most impressive IT firms. From it's monopoly in mainframes in the

1970's to its actual leadership in IT Services, IBM has managed to transform itself and

move very clearly in the different stages explained by the Delta Model. We will try to

build on this transformations and develop the idea that IBM is one of the firms that are

having the greatest success in sustaining a System Lock-In approach in the IT business.

The initial strategy of IBM was of Best Product. This strategy was based in equipment

sales and were performance driven and technology focused. Customers were attracted to

IBM as it enjoyed the benefits of being the dominant design in mainframes and later with

its PC business. The standardization of the PC, the Wintel[34] system, its open architecture

and other peripherals such as a TV monitor, a standard disk drive and the QWERTY

keyboard, rapidly became the dominant design and forced other manufacturers to emulate

their products to be accepted by customers. But this can be a risky strategy and not

necessarily one that can develop a long-term bonding with the customer. As Hax

mentions, " Customer loyalty is to the attributes of the product and they swiftly switch to

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[32] Ibid.

[33] Extended Enterprise – the firm, the customers, the suppliers and complementors. A complementor in this context
is a firm that can enhance the delivery of the firm's service and product portfolio.

[34] Wintel – The Architecture based on Microsoft Windows Operating System and Intel x86 CPU.

a different provider when offered superior attributes."[35]   This strategy would therefore

achieve low differentiation and relatively low profitability.

As IBM faced its critical years in the beginning of the 1990's, Lou Gerstner' s

appointment as CEO was a turning point. Gerstner, an outsider to the IT world, thought

to reposition IBM through a larger bonding with the Customer. It was the first time an

IBM senior executive said thank you for your business to customers. And this is exactly

what Total Customer Solution is about.   The strategy shifted from technology focused

into satisfying customer needs and integrating hardware and software packages. This

strategic shift in IBM provided it with the tools to learn about each customer in order to

provide customized solutions. In this context IBM made an important decision, which

was to concentrate in services, and created what is now the largest IT Service Provider in

the world, IBM Global Services (GS).[36]

IBM GS was tailored to the needs of IT Services and the growing trend of IT

outsourcing. In this context IBM also bought competitors to provide the best solution

possible to customers. As Hax mentions, " It is noteworthy that IBM's services business

has been its most persistent source of growth and profit. This services business has long

been engaged in Customer Integration, by working closely with customers to jointly

develop their computing and communications solutions."[37]

Another example of this was the acquisition of Lotus in the 1990's. This was an

important step for a proud company like IBM, which saw that to accommodate

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[35] Hax, Arnoldo C. & Wilde II, Dean L. The Delta Project. Palgrave. New York, NY: 2001.
[36] Blackmore, Dean et al. Worldwide Service Vendor, 1999-2000. Gartner Group. August 2001.
[37] Hax, Arnoldo C. & Wilde II, Dean L. The Delta Project. Palgrave. New York, NY: 2001.

customer's need they had to look beyond their in-house capabilities. Products like Websphere (which concentrates in Transactions and Integration), DB2 (which is the relational database and concentrates in leveraging information), Tivoli (which concentrates in System Management) and Lotus (which concentrates in leveraging know-how) were the four instruments to achieve a Total Customer Solution in software.

In services the concentration by IBM GS in integrating and using third party hardware and software products in its aim to satisfy the customer provided IBM with an edge. Another important characteristic of this period is the intense use of application software such as ERP[38] and CRM[39] in the business processes. EDS and other Service Providers also aim to be in this corner of the Delta Triangle. This strategy was therefore providing a better profitability than that of the Best Product and a higher differentiation in the range of solutions provided to the customer.

4.2.2. System Lock-In

But clearly there is an even better position in the Delta Model, which provides with the highest differentiation, therefore being able to be more responsive to customer needs and also to achieve the best profitability. This position is attained when the vendor is able to achieve System Lock-In. There are three ways to achieve System Lock-In: proprietary standard, dominant exchange and restricted access. Examples of proprietary standards are Microsoft and Intel and of dominant exchange are eBay and Priceline.[40] The restricted access is an example of competitors squeezed out by the lack of the channel ability to handle multiple vendors. Examples of this are Coca Cola and WalMart. It is in

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[38] ERP – Enterprise Resource Planning
[39] CRM – Customer Relationship Management
[40] Hax, Arnoldo C. & Wilde II, Dean L. The Delta Project. Palgrave. New York, NY: 2001.

this context that IT outsourcing can achieve a System Lock-In. As the scope of outsourcing goes beyond functional aspects and starts touching into business processes and strategic decisions, the IT outsource provider squeezes out any competition as it develops a deep understanding of its customer's business which makes it nearly impossible to switch it afterwards. This also opens other business opportunities as the service provider can tap into other services. The example of one of IBM projects proves this point.

Xcel Energy Inc., one of the ten largest utilities in the US has been partnering with IBM since 1995 to run its IT infrastructure. Xcel is the result of the merger of two Midwest companies in August 2000 and its markets encompasses 12 states, 3 million electricity customers and 1.5 million natural gas customers. As the relationship developed from IT outsourcing, Xcel turned into IBM GS to spearhead business and technology summits and to offer guidance and support in helping Xcel manage its business transformation.[41] This growing bonding is a good example of what IBM calls "second-generation outsourcing – a model that depends and thrives on shared knowledge, trust and collaboration."[42]

IBM is positioning itself to go beyond traditional outsourcing which sometimes can be limiting, as they tend to focus only in IT problems. Developing the bonding with the customer necessary to achieve System Lock-In can be very difficult. The use of financing options through IBM Global Finance is another way that IBM is aiming to create this System Lock-In.

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[41] IBM Global Services Brochure. May 2001.
[42] Ibid.

IBM has the following text to explain how they think customers are looking for in today's outsourcing providers:[43]

- Thought Leadership driven by a deep reserve of intellectual capital and resources, and supported by best-in-class technologies, methodologies, skills and practices

- A willingness to share both risks and rewards, as well as to 'sit at the table' to address and resolve challenges

- A proactive approach reflected in the ability to quickly and cost-effectively align services with IT, industry and business imperatives, with the goal of closing gaps between legacy systems and new technologies and applications

- Industry knowledge that offers added value in terms of aligning IT strategies and applications with business and market concerns

- A global presence incorporating the necessary know-how, technologies and infrastructures

- Scalable, asset-based 'plug and play' capabilities that include, but are not limited to, Web site and application hosting, storage and other utility services, and packaged application management services

- Proven skills in developing and deploying key e-business solutions, including knowledge and content management, collaboration, call center, electronic procurement and industry-specific applications

- Flexible financing packages that offer convenient payment options and accommodate both short- and long-term contracts.

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[43] Ibid.

4.3. Conclusion

The Delta Model provides with a valuable framework to try to understand how service providers can achieve competitive advantages in today's environment. We have used the example of IBM and IBM Global Services to show that service providers can achieve higher returns in the short, medium and long terms through a correct positioning in the Delta Triangle. The natural and inherent position for IT outsourcing is in the System Lock-In. This is also where the highest differentiation is achieved. The example given of an IBM client, Xcel Energy Inc., showed that the range of services to be provided could grow exponentially after the vendor achieves a System Lock-In. In

Figure 8 below we can find the position of IT outsourcing. We see also that when System Lock-In is achieved, there exists true collaboration between the organizations. An example of this is the comment done by one of the participants of the Inland Revenue and EDS deal mentioned in Chapter 3, " [w]e periodically sit down and ask, 'where is this relationship taking us?' And 'is it actually achieving something to our mutual advantage?'…but it does enable us to continuously re-appraise what our objectives are."[44]

We would recommend performing a much more detailed analysis of IBM in this context of the Delta Model as this discussion has raised several important issues such as:

- How can the forces described in Chapter 3 influence the position of IT outsourcing providers in the Delta Triangle?

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[44] Lacity, Mary C., and Willcocks, Leslie P. Global Information Technology Outsourcing: In Search of Business Advantage. John Wiley & Sons, Ltd. West Sussex, England: 2001.

- After achieving the System Lock-In with a customer how to prepare your company if those same forces change towards In-sourcing?

- Can System Lock-In be achieved with selective outsourcing?

System Lock-In - **Highest Differentiation; Best Profitability**
•True collaboration between organizations
•Result oriented and development of related services
•Inclusion of business processes and strategic decisions
•Squeeze out competitors by developing deep understanding of customers business

IT OUTSOURCING

Total Customer Solution
•Integrated packages
•Focus on customer needs
Higher Differentiation
Better Profitability

Best Product
•Equipment Sales
•Performance Driven
•Technology Focused
Low Differentiation
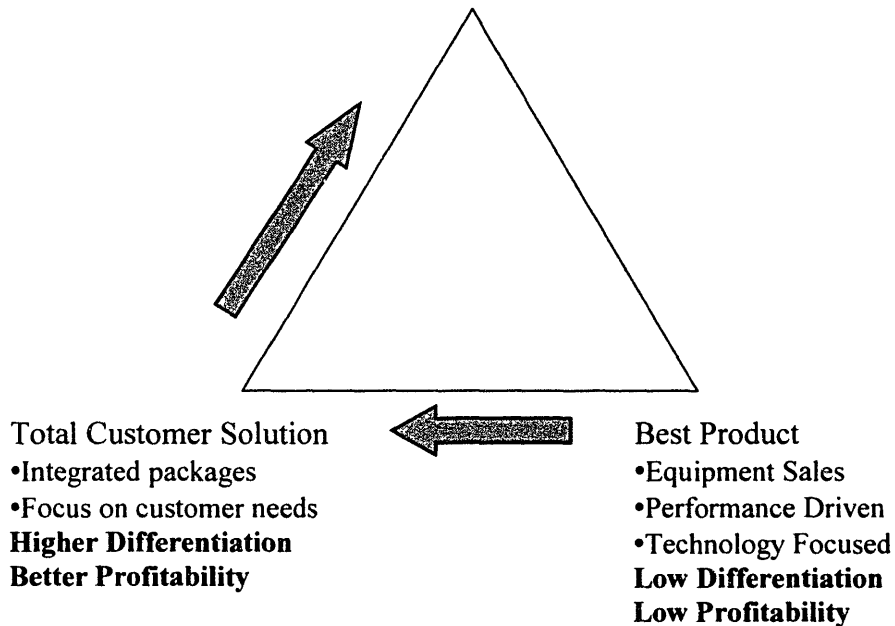**Low Profitability**

Figure 8: The Delta Triangle: The Position of IT Outsourcing

5. Michael Porter's Diamond Model

In this chapter we will shift gears to include the emerging markets. The previous chapters we have been focusing on broad IT outsourcing concepts and we will now try to narrow it down to the emerging markets. For this we will be using the framework of the Competitive Diamond developed by Michael Porter.[45] This framework will provide us with a rational way to analyze the need for a differentiating strategy to deal with IT outsourcing in emerging markets. In order for firms to develop and sustain a competitive advantage in IT outsourcing, firms need to understand the role of the different stakeholders in each market.

We will start by giving a very brief overview of Porter's Competitive Diamond and will continue with an analysis of the cultural and organizational characteristics of emerging markets IT industry using it. We will focus mainly on the aspects of the Porter Model that are more relevant to the IT outsourcing business in emerging markets and instead of encompassing all the factors mentioned by Porter. A critical approach to Porter's model is outside the scope of this work and we will use it as is. The use of this approach is based in the fact that Porter's model very well explains how macro-environmental factors influence an industry and by using only this model will permit us to make comparisons between emerging markets and developed countries. We will give examples of the different characteristics with the help of cases in which IT outsourcing has been applied around the world.

5.1. The Competitive Diamond

In Michael Porter's view the determinants of national advantage rest on four broad attributes that help shape the competitive environment in each country. In Figure 9 we can see a

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[45] Porter, Michael. The Competitive Advantage of Nations. The Free Press. New York, NY: 1990.

graphical representation of Porter's Competitive Diamond with the two external factors that

are Chance and Government and that influence all four of the attributes.

FIRM STRATEGY, STRUCTURE, AND RIVALRY
- Goals (company and individual)
- Priority in goals
- Domestic Rivalry
- New Business Formation

CHANCE

FACTOR CONDITIONS
- Human Resources
- Physical Resources
- Knowledge Resources
- Capital Resources
- Infrastructure

DEMAND CONDITIONS
- Segment Structure of Demand Size
- Number of Independent Buyers
- Rate of Growth
- Early Demand
- Early Saturation
- Internationalization of Domestic Demand

GOVERNMENT

RELATED AND SUPPORTING INDUSTRIES
- Competitive Advantage in supplier Industries
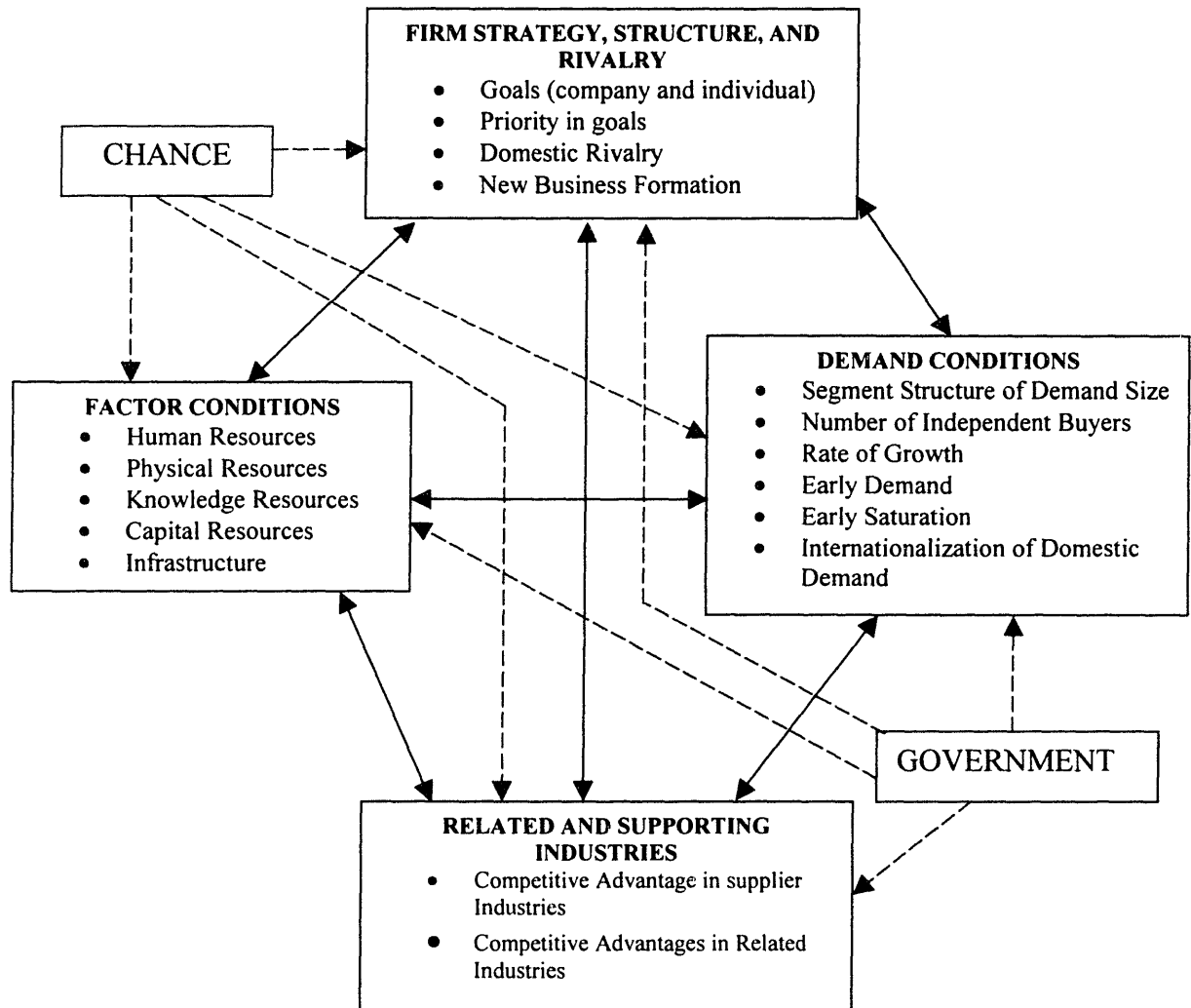- Competitive Advantages in Related Industries

Figure 9: Porter's Competitive Diamond

These attributes are:

- Factor Conditions

- Demand Conditions

- Related and Supportive Industries

- Firm Strategy, Structure, and Rivalry

The Factor Conditions that Porter makes reference can be grouped into the following categories: human resources, physical resources, knowledge resources, capital resources, and, infrastructure. Human resources relate to the quantity, skills, and cost of personnel. Physical resources relate to the quality, accessibility and cost of national physical resources. Knowledge resources are the nation's capability of generating scientific, technical and market knowledge. Capital Resources has to do with the availability and cost of financing for the market players. The Infrastructure factor relates to the quality, availability and cost of the infrastructure like electricity, communication systems, and transportation systems.

The Demand Conditions are based in home demand and can be characterized in three broad attributes. The first is the composition of home demand and how the mix and character of the home buyer influences the dynamics of competitive advantage of an industry. The second is the size and how its growth will be in the future. The pattern of growth gains in importance if the size of home demand is relatively smaller than in other countries. The third attribute is how the home demand characteristics and preferences are transmitted to foreign countries.

The Related and Supportive Industries makes reference to the presence of related industries that are internationally competitive. We will see later in this chapter that this is of extreme importance in the IT industry. The fact that supplier industries have a competitive advantage confers potential advantages as they produce inputs that can be used for innovation and internationalization.

The last broad attribute referred by Porter is Firm Strategy, Structure, and Rivalry. This attribute relates on how firms are created, organized and managed. This also encompasses the importance of laws and corporate governance. The structure of local rivalry is also part of this attribute.

In Porter's model, government and chance are seen as influencing all four factors. We will expand the role of government as influencer to a much broader scope, as the importance of government in emerging markets is markedly greater than in other countries. With regard to chance we will not concentrate in this aspect for the purposes of this paper.

5.2. Factor Conditions for IT Outsourcing in Emerging Markets

There are several important aspects to be analyzed as factor conditions for IT outsourcing in emerging markets. The main ones we will analyze will be related to human resources, knowledge resources, capital resources and infrastructure as they are ones where the greatest difference between developed and emerging markets exists in the IT outsourcing business.

5.2.1. Human Resources

Human resources are one of the most important aspects in the IT business, because IT outsourcing is people intensive. Getting the correct team in place early in an IT outsourcing project is crucial. Getting the correct and dedicated manager with the responsibility to understand the business and provide the link between the processes and the IT solutions is even more crucial. As Outsourcing Institute mentioned "[p]oor supplier management is the major factor in the failure of outsourcing deals... 25% of organizations that have outsourced reported relationship failures within the past 2

years."[46] In emerging markets the availability of experienced local managers to perform

this link has been growing strongly. An example of this is the software industry in India.

Technical workforce of Indian origin comprises more than one third of the workforce of

technology companies in Silicon Valley.[47] This workforce that has migrated from India

is coming back to their home countries and this is exemplified by the fact that most of the

multinationals present in the Banglore's Technological Park[48] are headed by Indian

executives with international management experience.

5.2.2. Knowledge Resources

The example of the technological parks in India and the establishment of centers of

excellence and learning have changed the scope of knowledge creation in the region. The

development of universities gravitating around these technological parks provided for the

much needed highly skilled labor for IT investments. IT outsourcing needs can be

rapidly satisfied by this pool of talent. This is not only found in India. Examples of

similar magnitude and in related industries can be found in other parts of Southeast Asia

and in Latin America. In Brazil for example, the infrastructure and knowledge creation

that sparked from the establishment in the 1950's of the Instituto Tecnologico da

Aeronautica-ITA (Aeronautic Institute of Technology) made possible the development of

pools of talent in the region. The success of companies like Embraer in Brazil (the

second largest world manufacturer of regional aircraft) are examples of the use of these

pools of talent. Another important point to be acknowledged is that in emerging markets

most of the knowledge centers were developed with the government playing an important

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[46] Jenkins, Del. The New Standard for IT Outsourcing: Delivering on Accountability Will Drive the Future of All Relationships. The Outsourcing Institute. New York, NY: 2002.
[47] Gartner, David. India's Plans to Plug the Brain Drain. Financial Times. London, England: April 24, 2000.
[48] Banglore Technological Park – The largest Software Technological Park established in the 1990's and situated in the south of India.

role. In the Philippines for example, 98% of total expending in R&D is state funded.[49]

But this policy has its limitations and other changes in the infrastructure of emerging

markets are needed. As The Economist mentions, "Politicians everywhere want to build

a Silicon Valley in their own country, but they can't. America's thriving high-tech

industries were not planned. Silicon Valley is what happens when thousands of scientists

and entrepreneurs migrate to a sunny rich state with tough patent laws, a sophisticated

financial system and a culture of inventing things and making money out of them."[50] But

countries with major infrastructure problems such as the ones in emerging markets can

use this as a unique opportunity. Different from other countries where legacy systems

pose an important hurdle in any IT implementation, the lack of those in several countries

give an opportunity to leapfrog to the newest technology. An example of this is found in

Brazil, which had lived with an inefficient telephone monopoly for decades and now has

more broadband DSL lines per head than Britain.[51]

5.2.3. Capital Resources and Infrastructure

The importance of developing an environment that attracts and retains capital is of

extreme importance for the IT industry. This has been one of the most difficult points for

emerging markets to develop the markets that can benefit from foreign investment. The

continuous policies in emerging markets of capital controls, financial crisis and

nationalist rhetoric have hampered the ability of many emerging markets to achieve

access to foreign capital. This has an impact in the development of a solid economy and

has jeopardized the development of strong local financial systems. Emerging markets are

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[49] The Economist. How Countries go high-tech. London, England: November 8, 2001.
[50] Ibid.
[51] Ibid.

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therefore having to chose between selling its banks to foreign institutions and therefore are constrained by international perceptions or to be constrained with a small local financial system and capital markets which has no capability to sustain the needs of companies.

The lack of infrastructure in emerging markets is another serious problem. What the most important for the IT industry is the problem of telecommunication infrastructure and power. The recent privatizations of these two utilities have given a better chance for emerging markets in these two problems. Investment in Telecom in Brazil, for example, will amount to over US$ 60 billion in the years 2000-2005.[52] This is a direct consequence of the privatization of the telecom companies in the end of the 1990's which has given the opportunity to Brazil to tackle the problem of its problematic telecom infrastructure. In the next chapter we will be discussing more in depth China's situation regarding these issues.

Another opportunity for emerging markets is the possibility to capture the offshore outsourcing opportunities. This opportunity appears when the major international companies having difficulties to hire and retain skilled labor at their home based and are forced to look elsewhere. IDC mentions, "[a]merican companies...are finding a vast pool of highly educated technology-savvy, English-speaking workers available overseas. These companies are sending IT projects offshore to compensate for the limited pool of talent available in the United States."[53]

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[52] Source: Ministry of Telecommunications of Brazil.
[53] IDC Press Release. As US IT Labor Tightens, Demand for Offshore Outsourcing Expands. February 28, 2001.

5.3. Demand Conditions for IT Outsourcing in Emerging Markets

5.3.1. Relative Size of Home Demand

One of the most important drivers of the interest of international IT Services companies in emerging markets is the tremendous amount of opportunities that the untapped home market arises. The size of the markets for IT outsourcing is immense as the growth of the markets proves it.

Although the US will continue to lead in the expenditure of IT outsourcing with 44% of worldwide spending by 2005 the compounded annual growth (CAGR) on IT outsourcing services for the world outside developed countries will be 21% in the 2000-2005 period.[54] This compares with an increase of only 10.3% for the same period for Western Europe and 12.3% for the US.[55] The size of worldwide expending in 2005 is expected to surpass US$100 billion being nearly US$70 billion alone from the US and Western Europe. Emerging markets will have a US$30 billion plus market.

5.3.2. Composition of Home Demand

In emerging markets the composition of home demand varies considerably from that of developed countries. Although several characteristics can be generalized to all countries, emerging markets are notably lagging in the need to maximize shareholder value. In emerging markets the presence of different institutions within the countries contributes to the need to understand all the stakeholders. The main players are the state-run companies that maintain the old policies of low productivity and lack of results. Also there is an important group of private companies which depend on protection policies from their

[54] IDC Press Release. IDC Forecasts Worldwide IS Outsourcing Services Spending will Surpass $100 Billion by 2005. May 14, 2001.
[55] Caldwell, Bruce. IT Outsourcing Services Growth Continues in North American Market. Gartner Group. 2001.
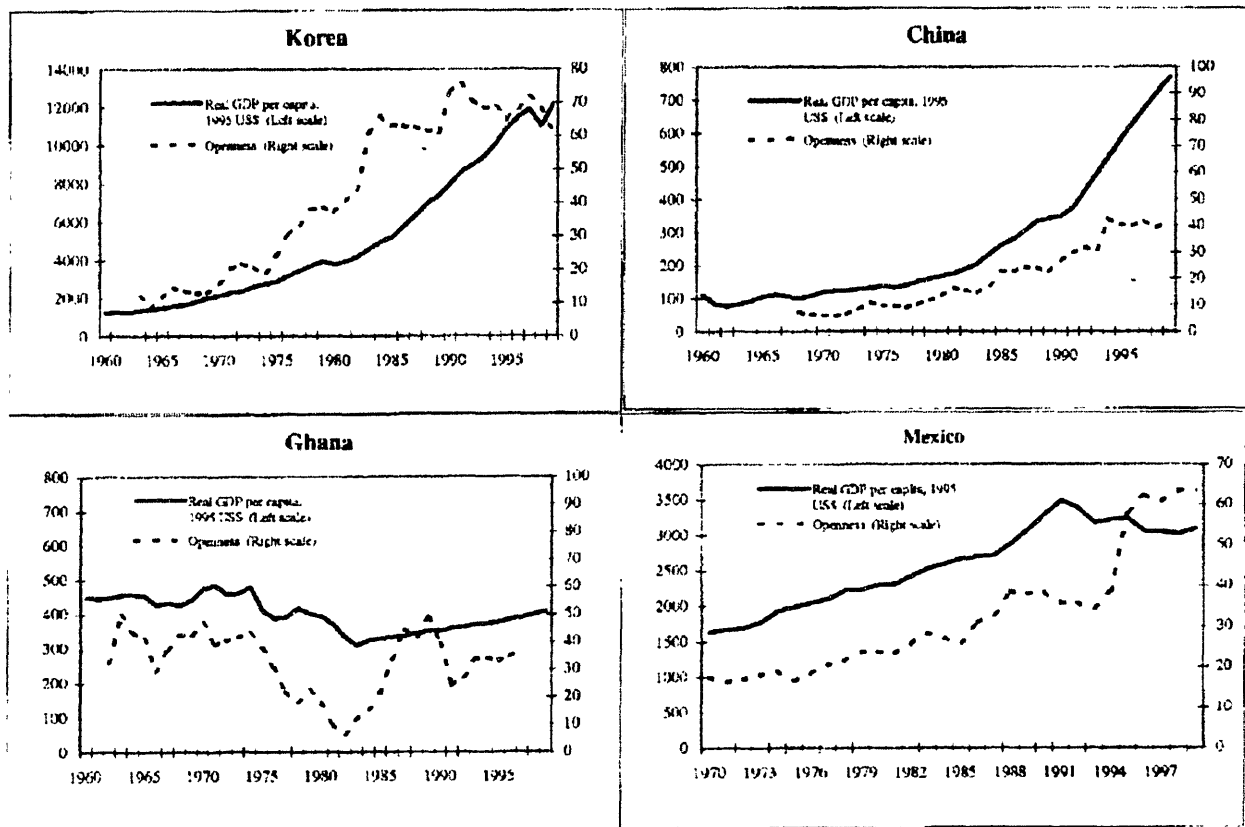
governments to maintain their profitability. On the other hand, there exist highly competitive companies in emerging markets that either through partnerships with foreign companies or through niche strategies can be considered as competitive as in any developed country. The capability to understand the differences of companies inside an emerging market and to develop different strategies to access those different companies is of paramount importance in any emerging market.

5.3.3. Internationalization of Demand

As companies in emerging markets are exposed to international markets the need to turn to outsourcing to remain competitive in the global marketplace grows considerably. Recent events such as China's entrance to the WTO, the implementation of Trade-Related Aspects of Intellectual Property Rights (TRIPS) under GATT rules and the development of free trade agreement throughout the world (ex: NAFTA) are clear examples of this trend.

The economic openness, which comes with this trend, is making possible the development of markets that transcend national boundaries. The increase in per capita income is one of the main drivers towards this openness. Figure 10 gives some examples of this. Korea, for example, has seen an average annual increase of 6% in trade openness[56] while doubling the real incomes every 12 years.

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[56] Sum of Exports and imports, divided by GDP.

Figure 10: Trade Openness and Real per Capita Income (Source: IMF)

5.4. Related and Supportive Industries for IT outsourcing

The third corner of Porter's Competitive Diamond concentrates in the related and supportive

industries. In IT outsourcing the main one is the presences of IT manufacturers. This

industry has an important influence in the development of the IT business, as we will see

further down.

The fact that there is an important physical presence of competitive IT manufacturers in

emerging markets has helped the development of a much broader market for IT outsourcing.

An example of this is the recent partnership between Computer Sciences Corp. (CSC), which

is the third largest IT outsourcing service provider with revenues in 2000 of $10.4 billion,[57] with the Indian software firm Satyam. This agreement signed in November 2001 will provide software related services for customers outside India.[58] This move by CSC illustrates a trend among service providers to partner with offshore service providers from emerging markets to remain price competitive. As the Gartner group comments, " [t]he changing economic climate creates the need for greater cost efficiency in sourcing, so the focus on offshore IT services firms has increased considerably...And US firms face pressure to compete effectively against the lower-cost services these offshore firms provide."[59]

5.5. Firm Strategy, Structure, and Rivalry

The development of a strong local environment in which firms are able to compete fairly has been one of the drivers in the success stories of IT in emerging markets. Issues such as corporate governance, development of strong local competitors, facilities to open companies and the existence of minimum legal structures are very important. Examples such as the Indian Technology Parks already mentioned have created firms able to compete not only in their own markets but also internationally.

An example of this is the company I-flex Solutions from India. I-flex Solutions has become the world's second largest provider of wholesale banking solutions and the third-largest provider of retail banking[60] and its recent entrance to the US market has made Gartner Group

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[57] Gartner Dataquest. August 2001.
[58] CSC Expands Its Offshore Outsourcing with New Partnerships. Gartner Group. November 2001.
[59] Ibid.
[60] Gartner Views I-flex as a Strong US Banking Contender. Gartner Group. February 2002.

say, "US-based competitors would be well-advised not to underestimate this proven global

provider."[61]

Although the example portrayed above, the main competitors in iT outsourcing remain the

international firms as seen in Figure 11 below. The top 20 IT Service providers remain

unchanged for the last ten years and will continue to be the so in a foreseeable future. The

leader, IBM Global Services, has no more than 5% of the world market share of IT Services.

This could create opportunities for consolidation and for the development of new players,

especially in local markets.

**Top 20 Worldwide IT Service Vendors by Revenue, 1999 and 2000
(Millions of U.S. Dollars)**

Rank	Vendor	1999 Revenue	2000 Revenue	Growth	2000 Total Market Share
1	IBM Global Services	$32,163.1	$33,148.2	3.1%	4.98%
2	EDS	$18,619.8	$19,223.7	3.2%	2.89%
3	Fujitsu	$12,565.3	$13,299.3	5.8%	2.00%
4	Computer Sciences Corporation	$9,200.0	$10,448.0	13.6%	1.57%
5	Accenture (formerly Andersen Consulting)	$9,120.6	$10,000.0	9 6%	1.50%
6	Cap Gemini Ernst & Young	$8,163.8	$7,771.6	-4 8%	1.17%
7	Xerox	$8,045.0	$7,718.0	-4.1%	1.16%
8	Hewlett-Packard	$6,158.5	$7,290.3	18 4%	1.09%
9	Compaq	$6,623.0	$6,696.2	1.1%	1.01%
10	NTT DATA	$5,707 9	$6,686.4	17.1%	1.00%
11	Lockheed Martin	$5,898.0	$6,487 8	10.0%	0.97%
12	Oracle	$5,560.8	$6,045.5	8.7%	0.91%
13	Hitachi	$5,515.8	$6,037.7	9.5%	0 91%
14	Automatic Data Processing	$5,595.0	$6,023.7	7.7%	0.90%
15	NEC	$5,444.5	$5,836.4	7.2%	0.88%
16	Siemens Business Services	$5,376.0	$5,210.9	-3.1%	0.78%
17	PricewaterhouseCoopers	$5,560.4	$4,864.9	-12.5%	0.73%
18	Unisys	$5,287.0	$4,740 4	-10.3%	0.71%
19	SAIC	$4,148.0	$4,400.0	6.1%	0 66%
20	SAP	$3,380.9	$3,491.6	3.3%	0.52%
	Top 20 Total	$168,133.2	$175,420.7	4.3%	26.34%

Source: Gartner Dataquest (August 2001)

Figure 11: Top 20 Worldwide IT Service Vendors

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[61] Ibid.

5.6. Government Influence in IT Outsourcing

The role of government in IT outsourcing in emerging markets is of extreme importance as it covers such diverse areas such as Intellectual Property Protection Policies and the development of the legal framework of the industry through regulations. Governments are seen in many parts of the world as providing growth, stability, education, quality of life and social distribution. Their role goes well beyond what is common in developing countries. To understand their role and to be able to influence locally the interpretation of laws is of extreme importance for any service provider that wants to participate of any emerging market.

Intellectual Property rights infringement has been during years one of the inhibitors of the development of IT services in emerging markets. But since the establishment of the Trade-Related Aspects of Intellectual Property Rights (TRIPS) by GATT members there has been a growing trend to respect Property rights throughout the world. The areas covered by the TRIPS agreement are:

- Copyright and related rights
- Trademarks, including service marks
- Geographical indications
- Industrial designs
- Patents
- Layout-designs (topographies) of integrated circuits
- Undisclosed information, such as trade secrets

The most important for IT Services are copyright and related rights and patents. The respect for these areas by emerging markets governments will provide for a benign environment for investment in IT Services. As The Economist mentions, " Firms will not bring technology to countries where it can be stolen with impunity."[62]

The development of the legal frameworks in emerging markets is also a point that differs from the realities of developed countries. Most of the emerging countries have only recently opened their economies and have been developing their laws and regulations to cope with this new reality. As mentioned before, if there is not a complete understanding on the players that will be influencing the creation and interpretation of the legal frameworks, investments in those countries can transform it in complete disasters.

Another important aspect where governments can have an important function is maintaining an economic policy that ensures capital flows to move freely. This will permit entrepreneurs in emerging markets to tap international savings. This can also create a change in climate that could encourage firms to invest even more in higher productivity.

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[62] The Economist. How Countries Go High-Tech. London, England: November 8, 2001.

6. A Case Study of IT Outsourcing in Emerging Markets – The People's Republic of China

In Chapter 5, with Michael Porter's Diamond Model, we have conducted a general analysis of how IT outsourcing business in emerging markets can differ from that in well-developed countries. However, neither can we nor do we have the intention to generalize the discussion and conclude that all emerging markets have similar attributes. Actually, each of those markets may have its individual attributes and some of the factors may vary from each other. The best way to get further understanding of an emerging market is to apply the Diamond Model specifically to that market. In this chapter, we are going to use the IT outsourcing market in the People's Republic of China (China) as an example of this study. We have summarized our analysis in Figure 12, the analysis is detailed in section 6.2.

Firm Strategy, Structure, & Rivalry
•Corporate Governance ... ... -
•Local Rivalry .... ++

CHANCE

Factor Conditions
•Human Resources .... o
•Knowledge Resources ... -
•Capital Resources ...... ++
•Infrastructure .... o

Demand Conditions
•Market Size & Growth..... ++
•Internationalization .... ++
•Demand within Segments ... o

Symbols:
++: Very Positive
+: Positive
o: Neutral
-: Negative
--: Very Negative

Related & Supporting Ind.
•IT Industry .... o
•Electronic Industry ... -
•Logistic .... +

Government Influence
•Strategic Direction ... ++
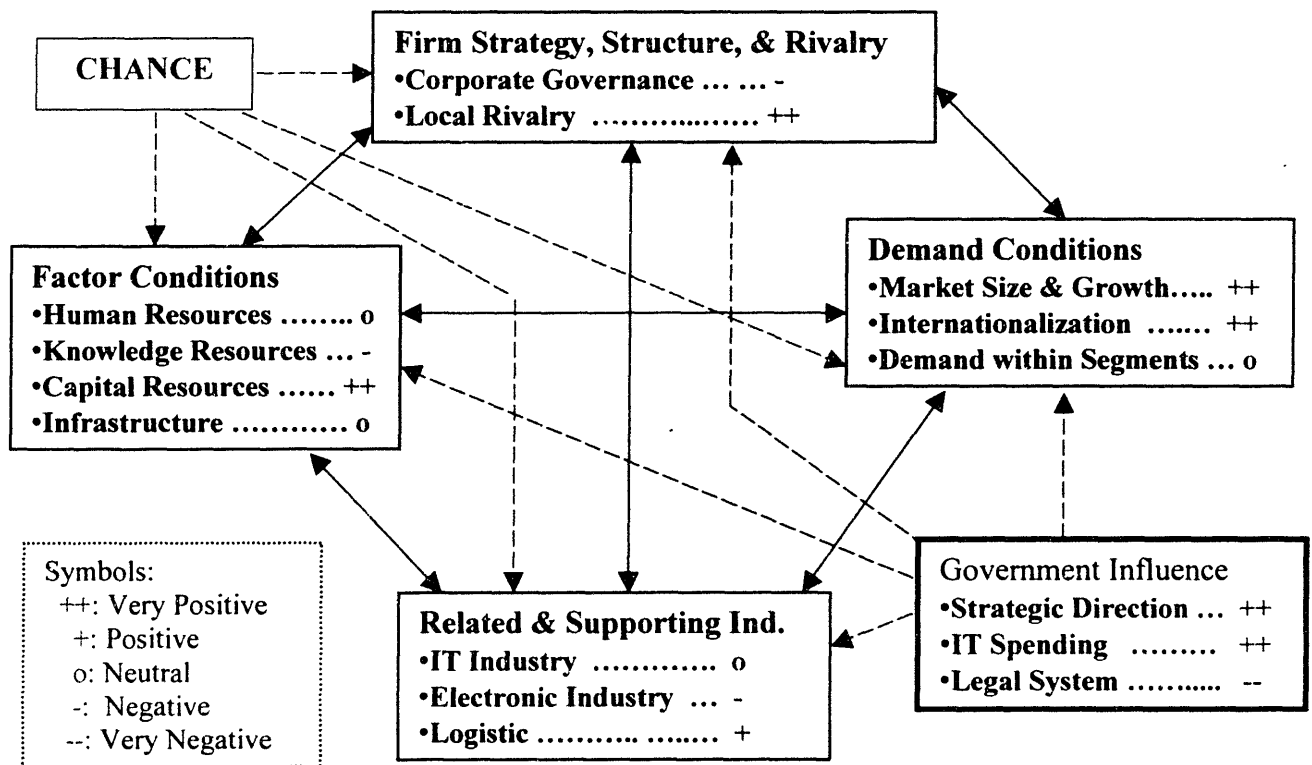•IT Spending .... ++
•Legal System .... --

Figure 12: Analysis of China IT Outsourcing Market with Porter's Diamond Model

6.1. Information Collection

We believe the best way to study a market with limited time is to conduct in-depth interviews with a carefully selected group of local players whose profiles include a variety of roles that can compose different views to the industry. For this purpose, we have visited China between April 2 and April 6 of 2002 and conducted in-depth interviews with people including:

- Senior managers of global-leading IT firms' subsidiaries in China, who are involved in the IT outsourcing business

- Chief executives of local IT firms who are involved in IT outsourcing business

- Senior executives (both IT and non-IT) of firms who are currently outsourcing, planning to outsource, or have carefully considered the possibility to outsource. The firms include large state-owned enterprises (listed and non-listed) and foreign-invested enterprises.

Most of the information in this chapter is based on the interviews conducted. Due to the agreement of confidentiality with the interviewees, we cannot publicize their names or their companies. However, it is possible to contact the authors and the information may be provided with advance consent of the interviewees in some cases.

6.2. Market Analysis Using Michael Porter's Diamond Model

6.2.1. Factor Conditions

6.2.1.1. Human Resources

Many of global-leading IT firms have set up their business in China since 10 to more than 15 years ago, started under the formats of either representative offices, joint-venture entities, or subsidiaries. Like in many other emerging countries, these global-

leading IT firms have provided the ideal environment to train local IT human resources, in both technical and management fields. Some of the employees who joined these companies in early stage have taken senior executive positions in their firms (including two of our interviewees) or in competitors, while some others have left the firms and started their own business successfully (including one of our interviewees).

In recent years, China has been the fastest growing major IT market in Asia as well as around the world. In 2002, while IT markets in several Asian countries will show negative growth, China will still have the fastest-growing IT market in Asia.[63] The fast-growing business opportunities and the huge potential in China have also attracted many overseas human resources to this market. Most of these people are well educated and many of them have significant working experiences in well-developed countries such as the United States and European countries. The backgrounds of these people include overseas Chinese, Chinese from Hong Kong and Taiwan as well as from South-East Asia countries such as Singapore and Malaysia, and Chinese students who have finished their overseas education recently. Nowadays more and more foreign-originated human resources are also attracted to join the IT workforce in China, many are working here temporarily, while some of them have even settled down with families relocated or got married with local Chinese. This category of human resource is the main supply of high-level management or highly skilled engineers.

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[63] Recovery of Asian IT Market (亞洲 IT 春暖花開). China Computerworld (計算機世界). April 2, 2002.

According to the findings from our interviews, the higher education system in China currently supplies between 25,000 to 30,000 IT-related graduates every year. Comparing to the number of around 100,000 IT-related graduates in India every year, this number still needs to be increased to fulfill such a fast-growing IT industry in China. While new graduates compose the main supply of "IT Blue-collar Labors", they will soon become skilled engineers who can become IT outsourcing human resource after accumulating several years of valuable experience. Like in all the well-developed countries, a solid higher education system is the foundation of a successful IT industry. Not only the quantity of IT graduates in China needs to be increased, the quality of education also needs to be further enhanced through cooperation with global-leading institutes and tighter links with the industry.

To summarize the findings, combining all the different sources of labors with varieties levels of skills, though the supply is catching up to the demand gradually, there is still a significant shortage of experienced high-end engineers and it takes time to close the gap. For IT outsourcing business, not only the shortage of highly skilled engineers is an issue, the lack of the professional who have experience in outsourcing project management, process optimization, negotiating service level agreement and performing contract management is an even more important barrier.

The cost of labor is another issue. For local firms to hire employees with IT skills, the wage level of someone with a bachelor degree is around RMB¥ 2,000 to RMB¥ 4,000 per month, or US$2,900 to US$5,800 per annum; the wages level of someone with a master degree is around RMB¥ 3,000 to RMB¥ 6,000, or US$4,300 to US$8,700 per annum. The wages will surely grow as the employees gain more years

of working experience in the organization, but not dramatically. On the other hand, global-leading IT firms who are actively involved in IT outsourcing business tend to pay much higher wages to attract a more selective range of candidates, with some enhanced skills such as ability to communicate in English. Combined with other high costs such as training etc., the result is significantly higher IT labor cost comparing to local firms, who are their potential customers. Many interviewees have a consensus on one point that in most of the cases they have seen in well-developed countries, cost saving have always been the top motivation to go for IT outsourcing. However in China, the significant higher HR cost of global-leading IT firms have made cost saving almost impossible through IT outsourcing to them in the near term.

6.2.1.2. Knowledge Resources

IT industry is absolutely a high knowledge-density industry, and IT outsourcing business requires not only IT knowledge but also management expertise. In well-developed countries, the supply of knowledge resources to the IT industry is mainly from academic institutes as well as advanced government- or private-funded research laboratories. This is a very important basis of the research and development of the IT industry. In China, this support is still weak but it is improving. Several global leading firms have set up research laboratories in China and some academic institutes have also built up close partnership with overseas institutes. However, for national security reasons, well-developed countries such as US still have laws to limit certain high-tech products and technologies to be exported to countries such as China. This will remain a barrier to fast growth and delay the progress.

6.2.1.3. Capital Resources

China holds the second largest foreign reserve in the world following Japan, or the largest foreign reserve if combined with Hong Kong and Taiwan (Figure 13). Following its open and restructuring in the early 80's, the huge business opportunities have attracted enough capital to make China the second largest foreign invested country in the world following the US. By the end of 1999, the total registered foreign investment in China has reached US$780 billion.[64] China has very rich capital resources to support its investments in any industries as the nation's strategic direction. As what will be discussed in section 6.2.5.1 Chinese government has a clear emphasis in IT industry as one of its focused areas of investment. That's the main driving force of the strong domestic demand of IT market. Further details will be discussed in section 6.2.2.1 about the market size as well as in section 6.2.5 about government influence.

6.2.1.4. Infrastructure

In the old days, like in many other developing countries, the infrastructure in China was significantly behind developed countries. However, in the recently years, the infrastructure has been improving very rapidly and significantly especially in the metropolitan areas. Power supply in major cities such as Beijing and Shanghai is reliable. National telecommunication infrastructure is under construction rapidly and within major cities, it is sufficient and reliable to support most of the needs of IT business. However, in smaller towns and cities, the infrastructure is still under development and it will catch up in the next few years in most of the areas.

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[64] Information from the web site of the Ministry of Foreign Trade and Economic Cooperation, People's Republic of China (中華人民共和國對外貿易經濟合作部). http://www.moftec.gov.cn.

		US$ billion	As at end of
1	Japan	403.5	Feb 2002
2	Mainland China	217.4	Jan 2002
3	Taiwan	125.0	Feb 2002
4	Hong Kong	111.3	Feb 2002
5	Korea	105.1	Feb 2002
6	Germany	84.1	Jan 2002
7	Singapore	75.3	Jan 2002
8	US	67.8	Feb 2002
9	France	58.2	Jan 2002
10	Switzerland	51.6	Jan 2002

Figure 13: Top 10 Official Reserves Ranking in the World

Sources: HKMA, Reuters, websites of International Monetary Fund, People's Bank of China

6.2.2. Demand Conditions

6.2.2.1. Market Size and Future Growth

The IT outsourcing market size in China will grow from US$580 million in 2000 to US$3.8 billion in 2003.[65] Cyrill Eltschinger, the Chief Executive Officer of I.T. United, has also predicted that the IT outsourcing market in China will be as big as US$50 billion by 2008.[66]

6.2.2.2. Composition of the Home Demand

According to the findings from the interviews, the demand of the IT outsourcing market in China can be segmented into:

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[65] The Chinese Newspaper of Computers (中國計算機報). September 6, 2001.
[66] Interview with South China Morning Post. March 20, 2002.

- **Foreign-Invested Enterprises (FIE):** including representative offices, joint-venture entities, and subsidiaries of foreign companies. These comprises of enterprises related to both well-known international companies and to specific industries. According to the information from the Ministry of Foreign Trade and Economic Cooperation of China, more than 400 of the Fortune 500 Global companies as well as 18 of the top 19 Japanese companies have a presence in China. The rest of them are companies either in specific service industries (such as banking) or producing certain goods (such as tobacco) for which foreign investment is still restricted by regulations.[67] These FIEs in most of the cases are highly regulated by their foreign parent companies by their corporate policies and procedures that will not be compromised. With its relatively limited resource in the start-up stage, to comply with the IT standard required by their parent companies may be a challenge. Also the FIE would normally like to focus on the core business as much as possible instead of putting a lot of efforts in IT. Thus, the possibility for these FIE to consider total IT outsourcing is very high, according to our interviews. Total IT outsourcing can bring these FIE the benefits of immediate system deployment, ready-to-access technical expertise, as well as worry-free IT operations. The standardized procedures and clearly defined needs as well as service level requirements already documented in their corporate policy will also reduce a lot of efforts in the process. If their parent companies already have existing IT outsourcing partnership with a global firm, things will become even easier. Also the lack of confidence in local legal system protection may be

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[67] Information from the web site of the Ministry of Foreign Trade and Economic Cooperation, People's Republic of China (中華人民共和國對外貿易經濟合作部). http://www.moftec.gov.cn

improved by supplementary agreements between the parent companies. To most of these firms, the focus of their business in China is on their business development, core competency, and internal control. As long as these objectives can be achieved, cost saving is not the top concern especially in the early stage. According to our study, this FIEs market weights the major portion of existing IT outsourcing business in China today.

- **State-owned Enterprises that are Publicly listed overseas (PSOE):** We have divided the State-owned Enterprises into two segments, those are publicly listed overseas (PSOEs) and those are not (USOEs). It is simply because their needs are different according to our study. Due to the facts that PSOEs are listed on major stock exchanges overseas such as New York Stock Exchange (NYSE), they have to comply with the regulations of the country where they are listed. This fact will motivate those companies to consider outsourcing part or even all of their IT to reputable IT firms for higher quality of services, though the cost may be raised comparing to doing it internally, as previously discussed in Section 6.2.1.1. Also because of the process of initial public offer (IPO), many of their procedures may have already been standardized and the requirements may be clearer. It will make it an easier job to define their IT outsourcing agreements. However, many of these companies play extremely critical roles in China's national infrastructure, such as major energy and transportation companies, serious concerns about national security and confidentiality can be a significant barrier to bringing total IT outsourcing into practice. From our interviews, we found the trend of IT outsourcing in this market segment already exists, but purely focused on non-

mission-critical parts only. Another finding is that cost concern in this market segment is higher than that in the FIE segment. The current business tends to concentrate on either top- or bottom-end of the technologies. For the bottom-end, such as non-mission-critical PCs regular maintenance, they are often outsourced to some local low-cost IT service firms to achieve cost saving. For the top-end, such as network routers or switches configuration, they are sometimes outsourced to reputable third-parties because the occasional needs do not justify these expertise that are normally expensive to acquire and maintain. There are 55 companies fall into this category as of April 19, 2002.[68] Although this is a small number, most of them are good size companies and the business potential is significant and growing.

- **State-owned Enterprises that are not Publicly listed overseas (USOE):** As previously mentioned, USOEs make a different market segment from PSOEs due to their different needs in business. At the end of 2001, there are in total 4,630 companies fall into this category[69] and it appears to be a huge market segment. The fact that these companies are not publicly listed overseas does not mean that these companies are small. Actually all the large banks in China (each with typically tens of thousands of branches and representative offices around the country, and hundreds of thousands employees in total) fall into this category. The similarities between PSOEs and USOEs are they are all quite large in size, many of them play critical roles in China's national infrastructure, and they can be

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[68] According to the web site of China Securities Regulatory Commission (中國證券監督管理委員會).
http://www.csrc.gov.cn
[69] Information from the web site of the Ministry of Foreign Trade and Economic Cooperation, People's Republic of China (中華人民共和國對外貿易經濟合作部). http://www.moftec.gov.cn

very sensitive about security and confidentiality issues. Many of them have concerns about what to do with their large number of employees in the existing IT teams if IT functions are outsourced. Unlike the POEs, many these companies have relatively less pressure to standardize procedures and clearly document business requirements and increase financial performance. The pressure of increase IT service quality exists but for many companies it is not within its top priorities if there exists urgency of other strategic issues. Additionally, most of these companies are purely focus on domestic market, where government regulations may still be in the building-up stage and may change from time to time. It is very hard to define clear sets of stable and standardized procedures of operation; hence the difficulties of writing clear IT outsourcing contracts are significant. Though this is a huge market segment with its total GDP weights more than half of the total GDP of China,[70] there are still too many barriers for companies in this segment to go for any significant IT outsourcing projects. However, note that every PSOE company was in this category before they went IPO. Those USOEs who are working on initial public offers (IPOs) worth IT firms serious attention for potential selective IT outsourcing business.

- **Small and Medium Enterprises (SME):** The SME market segment actually covers an extremely wide range of companies. The booming of Chinese economy in the recent years has attracted many overseas Chinese coming back to China for the fast-growing business opportunities. Many of them have either outstanding working experience or successful experience in starting up new business. This

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[70] Information from the web site of the Ministry of Foreign Trade and Economic Cooperation, People's Republic of China (中華人民共和國對外貿易經濟合作部). http://www.moftec.gov.cn

group of people has started up a significant number of new companies in China during the recent years. Those companies, though still in their early stages, need simple and reliable IT structure to enhance their competitiveness in their core business. This group in the SME market segment has good potential to outsource their IT for simplicity. For the SMEs with longer history, who have notable IT systems, what they want is worry-free and reliable operations. The advantage of this market segment is that the decision making process is typically shorter than large companies. However, most of them have limited budget and they are quite cost driven. Thus, it is hard for large global IT firms to pursue this market segment for IT outsourcing business. This market is more suitable for local low-cost IT firms who are interested in IT outsourcing business.

- **Government Organizations (GOVT):** In many ways, GOVT market segment is very similar to the USOE market. Like some firms in the USOE segment, government organizations are more conservative and, in many cases, have a good size IT department. Keeping the employment rate steady rather than increasing productivity concerns them more. Though we cannot see outstanding motivation for GOVTs to go for IT outsourcing, the existing bureaucratic procedures will reduce the efforts in process standardization should they ever decide to go for IT outsourcing. However, without the challenges USOEs are facing in the business world, the GOVTs have even less motivation to make changes and move towards IT outsourcing.

6.2.3. Related and Supportive Industries

The entire IT outsourcing business is built upon the information technology industry. The nature of the business is to embed products and technology into deliverable integrated service.

The composition of the entire IT industry includes computer hardware design and manufacturing, software development, electronic industry, and telecommunication industry. Among the forty industrial economy businesses categorized by the Chinese government, IT is the fastest growing category. Between the year of 1990 and 1999, gross production of IT industry in China has grown from RMB¥ 66.8 billion to RMB¥ 818.9 billion, representing an compound annual growth rate of 32.1%, which is far beyond the 14.2% average growth rate of overall industries.71 Due to its rapid growth, by 1999, IT has become the leading industry in China. The total production of information technology related products in 1999 were RMB¥ 583 billion. The production of IT industry has already achieved a weight of 8.5% of the overall industries in China in 2000.72

However, comparing to well-developed countries, the IT industry in China is still in its early stage, and the technology focus is still at lower level within the industry. The domestic IT industry's capability to fulfill the needs of high-end computer systems is still not yet established. Also there is no shortcut of building up a rich basis of local IT human resource with sufficient technical and management experience to fulfill IT

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[71] Information Technology Industry Has Become the Leading Industry in China (信息產業已成爲我國工業第一支柱). China Science and Technology Statistics (中國科技統計). 2000.
[72] Information Technology Industry Has Become the Leading Industry in China (信息產業已成爲我國工業第一支柱). China Science and Technology Statistics (中國科技統計). 2000.

outsourcing business, which is critical to the success of IT outsourcing business, as discussed in section 6.2.1.1.

6.2.4. Firm Strategy, Structure, and Rivalry

6.2.4.1. Corporate Governance

Corporate governance in China is still tight especially comparing to that in well-developed countries. For example the setting up process of a new company, especially for a foreign-invested entity, is still complicate and lengthy. It often takes months to go through the entire process[73] with involvement of government authorities (central and/or local subsidiaries) such as the State Administration for Industry and Commerce,[74] Ministry of Public Security,[75] State Economic and Trade Commission,[76] Bank of China,[77] People's Bank of China,[78] China Customs, Commission for Quality and Inspection,[79] State Administration of Taxation,[80] State Administration of Foreign Exchange,[81] Ministry of Labor and Social Security,[82] etc. The central and local government has been spending a lot of efforts to shorten and simplify this lengthy process, many local governments have relocated the local offices of government authorities related to business registration to one place to make the process easier. Also in several Special Economy Development Zones,[83] the process has been

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[73] Based on the information from the web site of FESCO (外企服務集團) http://www.fesco.com.cn
[74] In Chinese: 國家工商行政管理總局
[75] In Chinese: 公安部
[76] In Chinese: 國家經濟貿易委員會
[77] In Chinese: 中國銀行
[78] In Chinese: 中國人民銀行
[79] In Chinese: 國家制量技術監督局
[80] In Chinese: 國家稅務總局
[81] In Chinese: 國家外匯管理局
[82] In Chinese: 勞動和社會保障部
[83] In Chinese: 經濟發展特區

shortened and simplified to take only a few days. At this moment, according to our findings from the interviews, the time and complexity of setting up a new company in China varies significantly from one area to another. It is highly depending on the policy of local government authorities.

We have been using the abovementioned setting up process of new business to reflect the current practice of corporate governance in China. Details of business operating procedures in China are not in the area of discussion of this thesis.

6.2.4.2. Local Rivalry

Since IT outsourcing business is still in its very early stage in China, local rivalry is still weak as of today. All major local IT firms are still focusing on manufacturing and servicing specific IT products as well as system integration and some technical consulting services. According to Michael Porter's theory,[84] companies originated from countries where local rivalry is strong will have significant stronger competitiveness in the international market. Obviously this does not yet apply to IT firms in China in terms of IT outsourcing business in the international markets.

The major IT outsourcing players in China are mainly multi-national IT firms. According to our findings, their concerns today about IT outsourcing business are less about competition in the local market; it is more about market demand, government regulations, human resource and experience.

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[84] See Chapter 3 and Porter, Michael. The Competitive Advantage of Nations. The Free Press. New York, NY: 1990.

6.2.5. Government Influence

6.2.5.1. Government IT Strategies Leading to Significant Business Opportunities

IT industry has been under Chinese government's focus since China's open and restructuring in the early 80's. Among the 156 State Key Laboratories, 22 are directly related to information technology.[85]

The construction of a modern information technology infrastructure for the nation has always been a major portion of its strategic direction. The significant IT spending has attracted every major multinational IT companies setting up their investments in China to compete or partner with local companies to win as big a chunk as possible in this opportunity many consider as "once-in-a-lifetime". Even foreign governments have been deeply involved in providing not only consulting services but also loans to win business advantages for the companies from their own countries. According to the information from IDC published in 2000, the IT market size in China will maintain a compound annual growth rate of 23%, from US$9 billion in 1998 to US$31 billion in 2004 (Figure 14). China has been very lucky in terms of the timing of this huge build-up process since it matches perfectly well to the timing of the Information Technology revolution. China can take advantage of the most advanced technologies with minimum worry about legacy systems like many developed countries need to.

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[85] Including 6 in Computer Science and Technology, 4 in Information and System Science, 12 in Electronics, Communication, and Automatic Control Technologies, according to the web site of State Key Laboratories (國家重點實驗室). http://www.chinalab.gov.cn
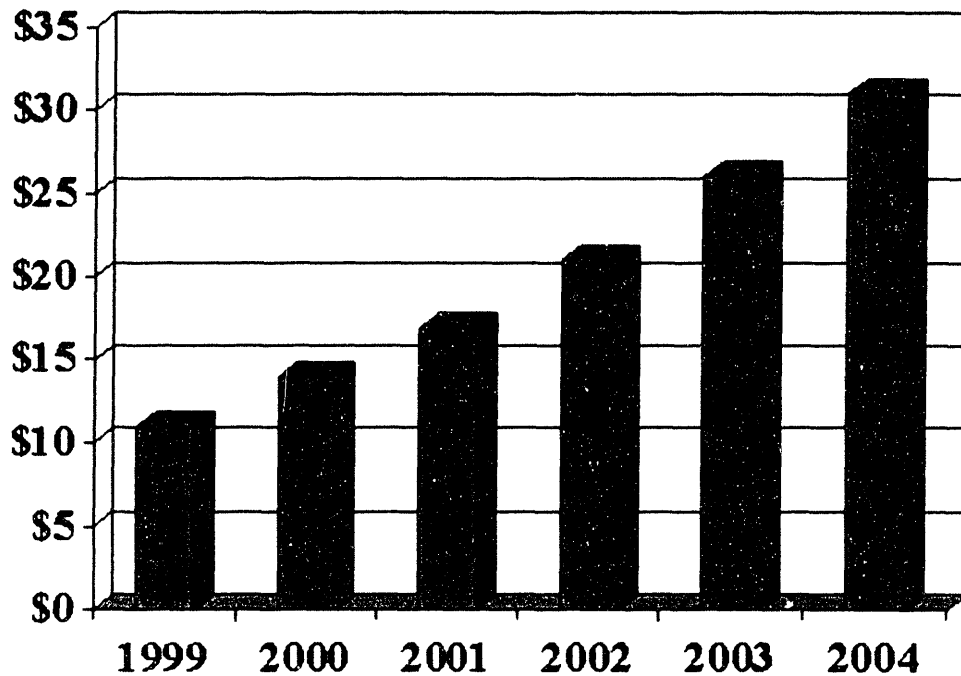
US$ Billions

Figure 14: IT Market Size of China (Source: IDC 2000)

Since 1993, the Chinese government has launched "10 Golden Engineering Project".

It is a good example showing how much emphasis the government has in setting up

the IT infrastructure of the country. The broadness of the project scope is also

significant. The "10 Golden Projects" are actually government online projects that

include:

- Golden Bridge – national public economic information network

- Golden Custom – foreign trade and economic information system

- Golden Card – automatic payment system and electronic currency engineering

- Golden Taxation – electronic taxation system

- Golden Agriculture – integrated management and information service system for agriculture

- Golden Enterprises – enterprise production and logistic information service system

- Golden Intelligence – research and education computer network and human resource engineering

- Golden Macro – national macro-economy decision support system

- Golden Information – national statistic information engineering

- Golden Hygiene – national medical information network

6.2.5.2. The Legal System

According to the findings from our interviews, for both customers and service providers, the support of the legal system is a common concern about IT outsourcing business in China. In full-size total IT outsourcing contracts in well-developed countries, we can often find hundreds of service level agreements being included and the requirement and specification definition are very detailed and complicate. However, it doesn't matter how well companies and IT firms can define their agreements, disputes still happen from time to time due to the ever-changing requirement and the complication nature of IT outsourcing business. Companies most of times try to resolve or negotiate disputes as much as possible to achieve win-win, however, court is the last resort of dispute resolution and it happens from time to time. According to our interviews, people still have no confidence that the legal system in China can effectively protect their rights in case IT outsourcing disputes happen and the lack of confidence is mainly due to the striking complexity of how a

case can be and the lack of experience of lawyers and judges in this field due to the lack of cases in the past. The concerns get even stronger when it comes to large state-owned enterprises or government organizations for which protection of confidentiality is a major issue.

Based on our interviews, this concern has become a major showstopper for many companies or organizations in consideration of outsourcing, and it always takes time to improve situations like this because there is no shortcut to build cases and experiences.

6.3. Conclusions of the Market Study

The business opportunities in the IT industry in China is real and solid. It has attracted every major multi-national IT firm to set up their business in China. However, in terms of IT outsourcing business, the situations and opportunities vary in different market segments. Figure 15 summarizes our finding from interviews and studies about the strength of critical success factors of IT outsourcing in different market segments. We have also summarize our general findings from interviews and studies as following:

- Most of the people believe it is a trend to move towards IT outsourcing and the market potential is very big;

- Some companies are already doing selective outsourcing for their low-end (such as PC hardware maintenance) or high-end (such as advanced network configuration) portion of their information systems;

- The benefit of cost reduction is not obvious in many cases due to the low human resource and logistics cost in China;

Critical Factors[86] of IT Outsourcing	FIE	PSOE	USOE	SME	GOVT
Top Mgmt. Initiatives	●	●	◑	◕	◔
Clear Needs and Specifications	●	◕	◔	●	◔
Clear Procedures	●	◕	◔	◔	◑
Required Expertise	◕	◑	◔	◔	◔
Motivation to Outsource	●	◕	◔	◕	◔
Environment Allows Gap Narrowing through Outsourcing	●	◔	◔	◑	◔
Legal System Support	◔/◕	◔/◑	◔	◔	◔
Matured Industry to Allow Consistent Procedures	◑	◑	◔	◑	◑

Figure 15: Critical Factors Analysis of China IT Outsourcing Market Segments

◔ ◑ ◕ ●

Weak ——————————▶ Strong

- Concerns such as lack of expertise to create and manage outsourcing contracts, lack of confidence in legal system's capability to protect this new area of business, lack of confidence in IT firms local experience in outsourcing business, the difficulties to clearly document requirements and procedures under the current environment etc. are holding back companies from moving towards full-scale outsourcing projects;

- It will take years before most of these concerns can be resolved, however, in some market segments, some of these issues are either non-critical or can be resolved by alternative solutions;

- The existing cases of total IT outsourcing are mostly in the FIE market segment. Where concerns can be covered by leveraging resources and experience from parent companies;

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[86] As discussed in section 3.3.

- The immediate IT outsourcing business opportunities are in the FIE market segment, where multi-national IT firms have competitive advantages due to expertise and quality of service and foreign resource leverage. Both selective and total IT outsourcing opportunities are available in this market segment;

- Mid-term IT outsourcing business opportunities are in the PSOE market segment, mainly in selective IT outsourcing. Multi-national IT firms can pursue the high-end portion for their expertise and local firms can pursue the low-end portion due to its cost competitiveness;

- Many other near-term business opportunities are in the SME market segment. Both selective and total IT outsourcing opportunities may be available. Local IT firms have clear competitive advantage here since most of these customers are very cost-sensitive.

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