Globalization: Offshore outsourcing of Information Systems

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ABSTRACT

The authors addressed the phenomena of software offshore outsourcing emerged in response of globalization. The authors investigated offshore economics, theoretical foundation, offshore trends, offshore development risks and new destinations to fulfill the requirement of this phenomenon. In response of this work, two research questions generated as results.

Keywords: offshore development, outsourcing, economics

1. INTRODUCTION

The offshore outsourcing of information system development is an emerging phenomena that generating employment in developing countries by sending work to offshore destination like India, Pakistan, China etc. It can be defined as follows:

“the significant contribution by external vendors in the physical and/or human resources associated with the entire or specific components of the IT infrastructure in the user organization”

[1]

“the handling over to a third party management of IT/IS assets, resources, and/or activities for required results”

[2]

“Offshore outsourcing is a trend likely to continue for the foreseeable future and is a reality IT must face”.

[3]

The outsourcing of work depends upon different challenges faced by MNEs [4]. According to Lacity & Wilcocks, market growth of IS offshore outsourcing is based on two reasons i.e. firms want to focus on core competency or unclear value of IS.[5]

2. OFFSHORE ECONOMICS

To understand the economic benefits of offshore outsourcing, lets create a scenario, one must be familiar with the concept of comparative advantage. For instance U.S.A have capability to produce 2 ships or 20 millions lines of code (software) with 1 unit of resources, and India can produce 1 ship of 14 million lines of code with 1 unit of resources. Assume that both are comparable in quality. It shows that U.S.A. can produce more and low cost suppliers for both than India, since it produces more of each good from a unit of resources than India does. In other words, what U.S. has is an absolute advantage over India in the production of both of these goods. Under the above circumstances, U.S. has a comparative advantage over India in the production of airplanes. Why? Because the cost of a ship in the U.S. is the same as the cost of 10 million lines of code (since both require half unit of resources), whereas in India it is the same as the cost of 14 millions lines of code (since both require 1 unit of resources).

Thus, relative to the cost of producing other goods (software), ships are cheaper to produce in the U.S. than in India. So large enterprises offshore their work to low cost (developing countries). The primary reason for companies to engage in offshore outsourcing is to reduce costs [6].
3. THEORETICAL FOUNDATION

Game theory is reported to focus on finding the right strategies and making the right decisions [7]. Game theory is closely related to economics in that it seeks to find rational strategies in situations where the outcome depends not only on one’s own strategy and “market conditions”, but upon the strategies chosen by other players with possibly different or overlapping goals. Mobjius defines game theory as a formal way to analyze interaction among a group of rational agents who behave strategically [8]. Rasmusen explains that game theory is concerned with the actions of decision makers who are conscious that their actions affect each other [9]. Subsequently, it can be said that game theory is concerned with the actions of decision makers who are aware that their actions affect each other [9, 10]. Terborg and Burton notes that by turning business into a game, one can tap into the universal desire to win [11]. And in order to win, everyone needs to understand the rules, master the fundamentals, know the score, and play together as a team.

4. OFFSHORE OUTSOURCING TRENDS

The multinationals are signing thousands outsourcing deals around the world. Academics, by and large, have been relatively slow to research this phenomenon. It may be the complex nature of topic that generates little interest within the academics. Although, academic research have been increasing in this area gradually. Information systems play a vital role in operational and strategic role enabling business organizations to meet challenges of market (customer satisfaction, competitive edge, market growth, branding products) and to cost reduction and maintain quality by providing right and timely information [12]. It runs like life blood in our daily life [13]. Improvement of processes associated with information systems has become the focus of researchers due to high failure rate of software [14, 15, and 16].

5. OFFSHORE DEVELOPMENT RISKS

Fredrick Brooke identified the gap between low and high quality software engineering practices used to develop information systems [17]. This gap is still consistent argued by [18,19]. The software engineering practices criticized from two aspects. First is that researchers prescribing practices are not aware of what practitioners are actually doing investigated by [20]. Second is investigated by McBride that practices, methods, techniques and standards are not evaluated before deployment [21]. It is also explored that identified methods, techniques and practices are not applicable to all software development organization [22, 23]. There are many other risks faced by international offshore projects. The mum effect occurs when one or more stakeholders who have information indicating a project is failing decide to remain silent and let the project continue [24]. The mum effect has been attributed as the cause of failure of some multimillion-dollar software projects. The best example of mum effect was a project, “CONFIRM project”, which faced a $125 million failure [25], similarly, a cross-cultural study conducted by Tan et al., it was found that individualism increased the impact of organizational culture on the willingness to report bad news [26]. While other reasons include need for extensive product and service localization, the ability to use time zone differences for working hours shifts 24/7, and as a means of opening markets in foreign countries [27].

6. NEW OFFSHORE DESTINATIONS

The deployment of right software engineering techniques in information systems development process is the basic step to maintain quality in software products and services to satisfy the customers. The best software firms maintain quality based upon software development approach which results in fewer defects, shorter delivery times and better value to customer. The challenge in deploying a methodology is to avoid steps that waste time, dispel output, demoralize programmers, software engineers or web developers, and create ineffective supervision. The best approach for applying a methodology is one that successfully deployed a software system by satisfying its customer at 360°. Therefore, large enterprises in head quartered in developed countries offshoring their information systems projects to firms in countries who provide peaceful business environment, skilled and low cost labor. The offshoring outsource process is prominent glide due to prospective payback, qualified work force at low cost and continuous operation to companies. The top six potential locations for offshoring services based on financial attractiveness, worker skills and availability, and business environment from Asian countries i.e. India, China, Malaysia, Philippines, Singapore, and Thailand [28]. The average programming cost in Asia, for instance, is 5–12 times lower than in the West and is expected to remain at least four times lower in 2015 [29].

7. RESEARCH QUESTIONS

The above research justified that software development industry of a country should be ready to grasp the coming wave of economic pleasure and prosperity in the form of offshore outsourcing. The authors able to propose the following research questions:

**Research Question 1:**

Are small and medium software development firms of national software industry equipped with latest tools and technologies to clatch the global wave of offshore outsourcing of information systems and to what extent can Pakistan be successful in exporting software and its services along with investigation of success factors and challenges for Pakistan to enhance the exports?

**Research Question 2:**

To what extent software engineers, programmers are equipped with standard offshore software development skills in these small and medium software development firms and Is there a wide variation in the espousal of standard software process by software engineers, programmers in software development small and medium enterprises in national software industry?
The current research is conducted for the betterment of national software industry of Pakistan.

8. REFERENCES


