

# Dynamic Tools for Outsourcing IT Firms in the Context of Innovation

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## Abstract

To carry out this study, both the qualitative and quantitative methodologies have been used to collect the evidences and analyzed in light of comments, discussions and feedbacks recorded during surveys and interviews. Results of this case-study indicates, that the factors like positive attitude for innovation, investment towards R&D and willingness to adopt profit and risk sharing approach for business found prominent. However, lack of concern regarding IPRs and scientific publications has also been found in the firms. Statistics also reveal the absence of linear relationship among different variables however, association between some of the factors (i.e. IT outsourcing for innovation, Innovation is important for progress & survival and Investment in Research and Development) found significant.

**Keywords:** Information Technology, Business Process Outsourcing, Information Technology Outsourcing, Human Resource Development, Innovation

## 1. Concept of Outsourcing:

According to Wang and Koong (2006) outsourcing is “the concept of hiring outside professional services to meet the in-house needs of an organization or an agency” (Wang Y. J. & Koong K. S., 2006). It is the transfer of different business functions of an organization to specialized service provider/supplier to improve focus on core services (J. Gómez et al, 2009; Ahmed, Raza & Shahid 2012; Schönteich, 2004). In today’s global economy, it has turned into the most commonly used business strategy (Dhar. S & Balakrishnan. B, 2006) which saves money, improves quality, increases production and also increases flexibility in the firm (Ahmed, Raza & Shahid 2012; Schönteich, 2004).

It is also the fact that most of the available literature highlights more about the cost saving aspects or financial benefits of outsourcing and fewer describes its *innovative* role. But outsourcing is no more only about cost saving; though the concept of innovation in-relation to outsourcing is still blur but existing literature reveals it as an external source of innovation and as strategic relationship (agreement) between client and supplier that adds-value to the solutions fostering innovation (Oshri & Kotlarsky 2011; Costa et al. 2011). Such strategic relationship also encourages collaborative effort for innovation (Oshri I. & Kotlarsky J., 2011) which fosters innovation climate in the organization (Lojeski, 2005) that helps both (client and supplier) to improve products and services.

## 1.1 Concept of Innovation

Oslo Manual (2005) defines that an “innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations” (Oslo Manual, 2005).

In another place E.M. Rogers defines that “An innovation is an idea, practice, or project that is perceived as new by an individual or other unit of adoption” (Sahin. I, 2003).

Innovation is an important ingredient of every business strategy for gaining competitive advantage. Brusoni et al. (2006) elaborates that those firms doing innovation are more successful and progressive as compared to non-innovating firms and those (firms) who fails to innovate becomes stagnant and disappears from market (Brusoni et al., 2006) which has been acclaimed globally.

### 1.2 Innovation in IT Outsourcing.

Most of the business firms outsource IT functions to improve their performance by gaining competitive advantage and excellence in their core services (Dhar. S and Balakrishnan. B, 2006) not available in-house (Kobelsky. K & Robinson. M, 2009). Though some of the literature has stated it as a risk for in-house innovation capabilities but still the market of IT outsourcing is constantly growing (Oshri and Kotlarsky, 2011, p.2). Willcocks and Kern have defined IT outsourcing as "...the handing over to a third party management of IT/IS assets, resources, and/or activities for required results" (1998, p. 2).

### 1.3 Influential factors in IT outsourcing.

Innovation does have positive impact on business practices and changes its intensity as per various factors which exists in any organization i.e. organizational factors, individual factors, environmental factors, contextual factors (Lin Y, 2007; Ross E, Kleingeld and Lorenzen, 2004). Several studies have also been carried out investigating different factors that may facilitate or enhance innovation in business organizations but failed to present concrete evidences.

Ross, Kleingeld and Lorenzen (2004) have described such factors as key enablers of innovation which they have grouped as the individual, organizational environment, business context and external environment as shown in **table: 1**.

<b>The Individual Factors</b>	
Motivation and challenges	Learning and growth
Recognition and reward	Skills and competences
Creativity	Championing
<b>Organizational Environment</b>	
Leadership	Design
Vision	Internal Processes
Organizational culture / values	Auditing
Management	Quality
Information and Communication	Infrastructure and resources
Experimenting	Systems and tools
Diversity	Strategy
<b>Business Context</b>	
Conference and exhibitions	Benchmarking
JV's and partnerships	Competitors
Customers needs	Suppliers
<b>External Environment</b>	
Strategic Scanning	New Markets
Networking	Government Programs

**Table 1:** Key enablers of innovation presented by Ross, Kleingeld and Lorenzen, 2004.

Such factors may have positive impact on **in-house** performance of any company but in case of external links or outsourcing, factors do change their form so as innovation. In outsourcing literature, the client-supplier contractual relationship or legal binding plays significant role in excelling mutual learning capabilities and innovativeness of the outcome through knowledge transfer. In fact such contractual relationship sets the modalities for implementing collaborative efforts for innovation. Those firms who wanted to outsource but very much cautious about the time i.e. duration of the project and cost of material, they usually prefer to rely on fixed-price contracts with suppliers having less flexibility unlike joint-venture contracts in which both the stakeholders (client-supplier) share their profits as well as risks and work together to discover new markets and technology that can lead them to achieve economic success (Oshri and Kotlarsky, 2011). Such partnership increases creativity in R&D and facilitates skills transmission in the firm.

## 2 The study has the following objectives;

1. To identify the firms outsourcing IT services to other specialized firms.
2. To determine the factors that may contribute towards enhancing or facilitating innovation in IT outsourcing firms.

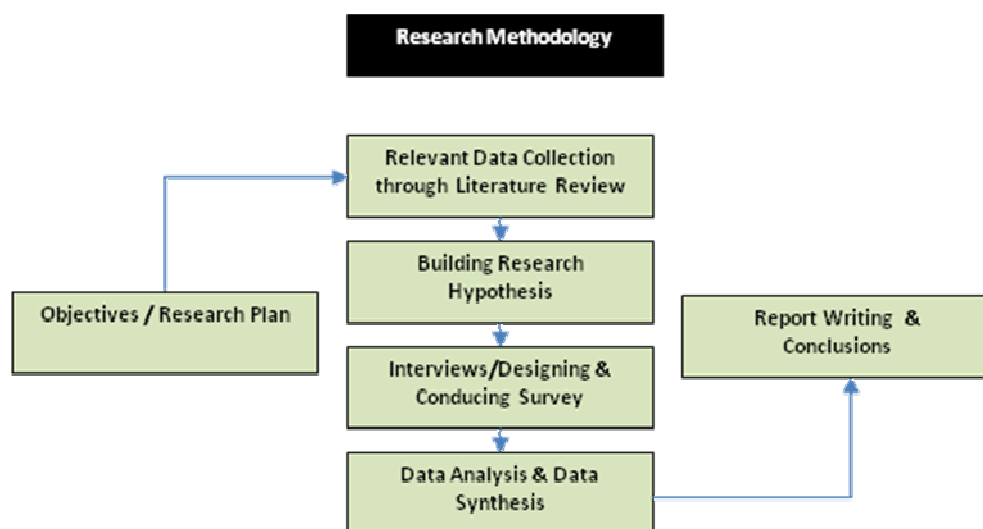
## 3 Research Methodology

To carry out this study, both the qualitative and quantitative methodologies have been applied. In which observations are measured quantitatively in light of comments, discussion and remarks recorded during surveys and interviews. The preliminary information regarding factors have been collected through an extensive literature review of relevant research articles, survey reports and case studies of the successful companies borrowing IT services or IT related technologies from specialized firms.

Survey questionnaires were served to the sample of 170 firms/companies randomly selected out of 300 firms/companies. Heads/CEOs and managerial level officers of firms were also been interviewed during the survey. Questionnaires were served via various sources of communications i.e. e-mails, telephonic interviews, scheduled meetings and personal visits.

During visits, a short series of unstructured interviews also been taken with the firm level managers or representatives of the IT firms (Suppliers) for better understanding of outsourcing related issues in connection to innovation.

Finally, the collected data is analyzed through SPSS (Statistical Package for Social Sciences) software which is an important statistical tool for interpreting the collected statistics in order to reach comprehensive conclusions.



*Figure 1: Research process flow chart.*

## 4. Data Analysis & Interpretation:

In this chapter, results of the data analysis and interpretation of each item have been presented along with the separate frequency tables and cross relation analysis. Items which were included in the survey, drafted in light of the list of identified factors as shown in **table: 2** from the literature review.

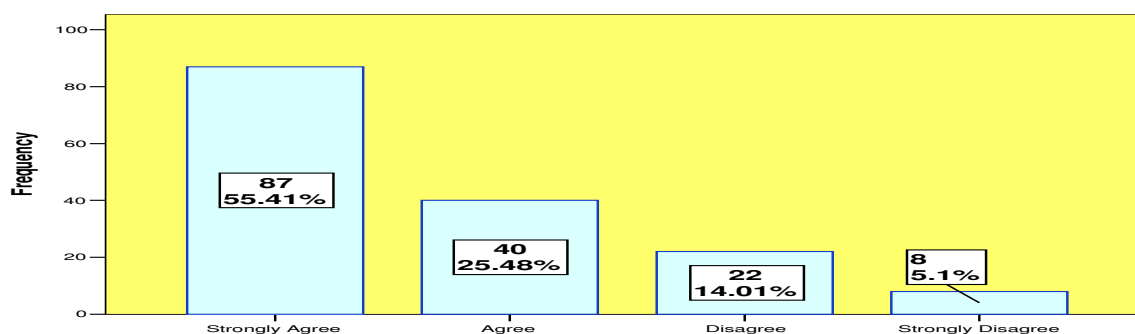
#### 4.1 Data analysis and interpretation of items.

##### 1. Innovation is important for progress & survival

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	87	55.1	55.4	55.4
	Agree	40	25.3	25.5	80.9
	Disagree	22	13.9	14.0	94.9
	Strongly Disagree	8	5.1	5.1	100.0
Total		157	100.0		

Enquiring about whether in their views, the innovation was important for progress & survival or not, the respondents came up with varied degrees of replies. A majority of about 55% (87 out of 157) strongly held it in affirmative, whereas 25.3% did agree to the notion, albeit to a bit lesser degree. A total of about 19% did not agree with the innovation being a necessary pre-requisite for progress and survival, a subset of which, comprising of about 5% had an opinion of disagreement, with strong conviction. There appeared a wide variety among these groups as well, as far as the reasons behind these concepts were concerned, a detailed account of which is much beyond the scope of this dissertation, nevertheless, a few salient ones are discussed here. A good proportion of those who strongly agreed held this opinion on their belief that without pursuing innovation in Information Technology, the chances of lagging behind in these times of cut throat competition are increased. Another subset of this subgroup opined that more than the technology itself, it is the pace-keeping with the contemporary competitors in the market which bears more importance, as, to them, the psychological perception of the client with regards to the organization, in views of the maintenance of standards is the point of primary focus than even the efficiency, in literal sense of the word.

Similarly those who disagreed held varied opinions behind their perceptions. Some thought it just a waste of time, money and energy to constantly keep pursuing innovations in information technology without substantial good results, i.e. in their views it was like putting too much effort for too little return. While the other group thought that excessive innovation, and that too, very rapid in evolution, itself causes impediments and produce sluggish results. To them, the rate of advancements in information technology was too high in comparison to an organization's capacities to invest in this regard, most often than not which has been depicted in the **Figure:5**.



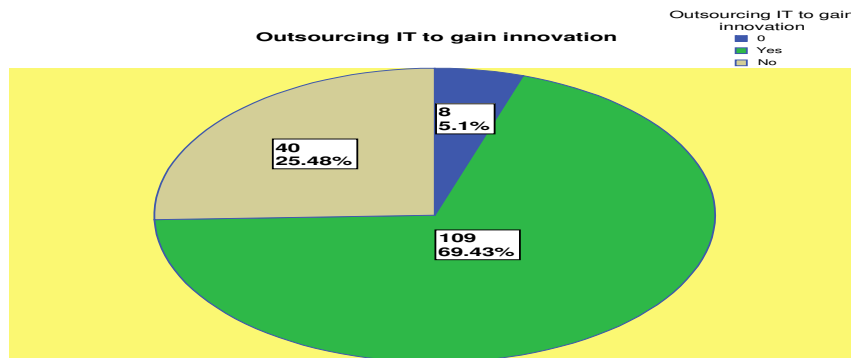
**Figure 2:** Innovation is important for progress & survival.

#### 4.2 Outsourcing IT to gain innovation.

		Frequency	Percent	Valid Percent	Cumulative Percent
No response		8	5.1	5.1	5.1
Yes		109	69.0	69.4	74.5
No		40	25.3	25.5	100.0
Total		157	100.0		

When it was enquired by the participants that whether they outsource IT (Information Technology) to

gain innovation or not, then majority of them i.e. 69.4% (109 out of 157) came up with the positive response endorsing that outsourcing IT brings them innovation whereas 25.4% respondents did not agree that outsourcing IT could play role in facilitating innovation and gave their response in negative. However, 5% of the participants did not give any response in return as clearly depicted in **Figure 6**.

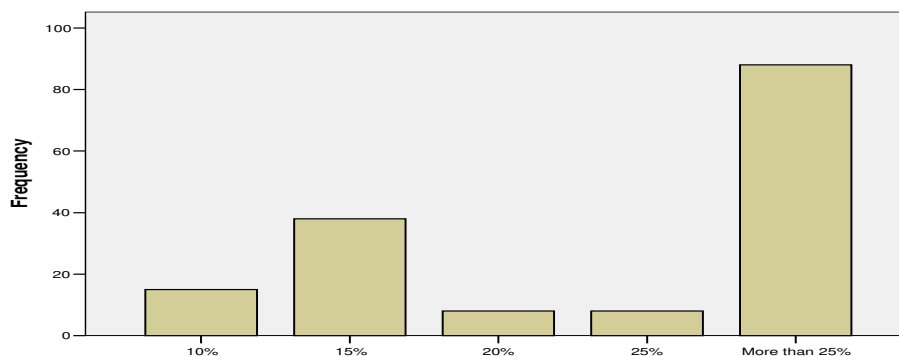


**Figure 3: Outsourcing IT to gain innovation**

### 4.3 Proportion of technical employees

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 10%	15	9.5	9.6	9.6
15%	38	24.1	24.2	33.8
20%	8	5.1	5.1	38.9
25%	8	5.1	5.1	43.9
More than 25%	88	55.7	56.1	100.0
Total	157	100.0		

Probing on the technical staff/employees working in the firms, the majority of about 55.7% (88 out of 157) firms showed to have more than 25% of the technical staff, whereas, about 24% (38 out of 157) of firms showed an inclusion of about 15% of the technical staff. However, those firms having 10%, 20% and 25% of technical staff were few in numbers.



**Figure 4: Proportion of technical employees**

#### 4.4 Scientific Publications

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
0	64	40.5	40.8	40.8
2 publications	15	9.5	9.6	50.3
4 publications	18	11.4	11.5	61.8
6 publications	31	19.6	19.7	81.5
8 publications	22	13.9	14.0	95.5
More than 8	7	4.4	4.5	100.0
Total	157	100.0		

About 40.5% (64 out of 157) had none of the scientific and technical publications to their credit. Just a few, about 4.4% (07 out of 157) were found to have more than 8 publications which is the lowest figure in this survey. However, about 19.6% (31 out 157) found having 06 publications which is highest rate of publishing firms in this survey. About 13.9% (22 out of 157) firms found having 8 publications which is second highest figure in the survey. This shows that majority of the firms have lack of priority for conducting case studies and scientific publications which plays a significant role in self-assessment and improving routine practices of a firm.

Different reasons were given in support of this missing piece of work. Some based it on the relatively scarce financial resources. Others held that contemporary research, already conducted by more systematic and affluent organizations was enough for them to extract the necessary information and evidence required in this connection. Still others revealed that since the major decision making was to be done by relatively less technical & professional owners, and because there was little room or flexibility with regards to modulations to the already existent operations of the organization, the financial chunk devoted to research and development might produce academic results with little practical productivity, etc.

#### 4.5 Proportion of technical employees:

	Frequency	Percent	Valid Percent	Cumulative Percent
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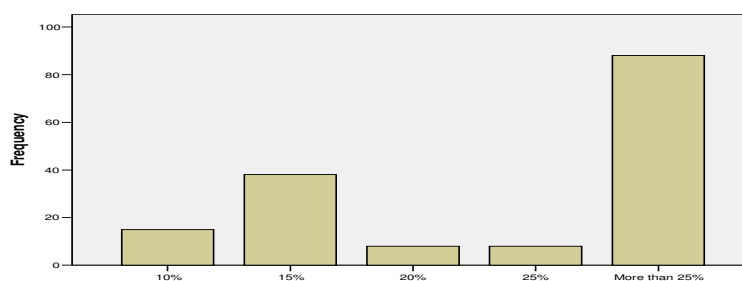


Figure 5: Proportion of technical employees

#### 4.6 Experience of outsourcing IT

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Good	95	60.1	60.5	60.5
Not good	7	4.4	4.5	65.0
Indifferent	55	34.8	35.0	100.0
Total	157	100.0		

When respondents were asked about their experience of outsourcing IT services and its role in facilitating innovativeness of the firm, then majority of about 60% (95 out of 157) responding firms came up with good experience, in which most of the firms declare their good outsourcing IT experience as ease in data management by switching from old filling system to computerized database management system which is easy to manage and faster to operate. Similarly, they share that it provides data authenticity, faster communication system and easy data integration. Unlike the fact that borrowing technology is not enough for innovation; it is the intelligent use of that borrowed up-to-date technology that gives novel problem solving method, product or service, usually termed as 'out of the box' solution.

Whereas, about 34.8% (55 out of 157) firms did not agree with this notion and gave no response or remain indifferent however, about 4.4% firms were not happy with their experience of outsourcing IT but doing it because of the decision made by higher-ups of the firm.

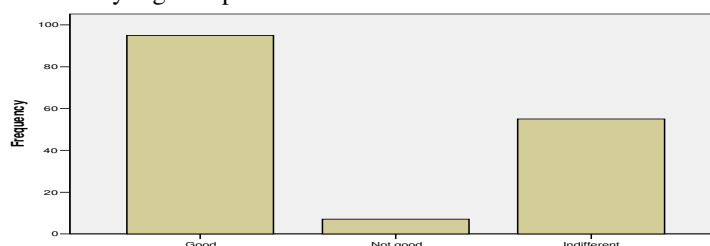


Figure 9: Experience of outsourcing IT

#### 4.7 Extracting Factors from Survey:

During survey, a strong sense of agreement have been observed from respondents for some of the factors which were collected during literature review (shown in *Table:1*) but practically they were found contradictory to their remarks as well.

*Table: 3* showing such contradictory responses lined up with the list of factors along with the actual response and total nos. of responses.

Sr. No	Factors	Questions	Actual Response	Percent Out of 157 responses	Frequency Out of 157 responses
01	Positive Attitude	Innovation is important for progress & survival.	Strongly Agree	55%	87
		Outsourcing IT to gain innovation.	Yes	69%	109
02	R&D	Area of priority for investment	Core Services & R&D	61%	95
		Investment in Research & Development	15%	23%	36
03	Skills Transmission	Proportion of technical employees	More than 25%	56%	88
		Strength of employees	20-40	25%	40
		Average qualification of working employees	Secondary	48%	76
04	Effective Channels of Information	Seminars, Conferences, Workshops, etc held	Rarely	51%	80
05	IPR & Regulations	Number of registered patents	Zero	69%	109
		Effect of IPRs on R&D	Positive	60%	94
06	Contractual Relationship	Contractual relationship suitable for innovation	Joint Venture	60%	94
07	Accumulation of knowledge	Scientific publications	Zero	41%	64

*Table 3: Showing factors along with actual response and total Nos. of responses.*

In order to extract the most influential factors from survey, the highest response rate of each question is lined up with the list of factors gathered during literature review. It is found that majority of the respondents i.e. (87 out of 157) agreed with the importance of innovation for survival and progress and about 69% (109 out of 157) came up with the positive response endorsing that outsourcing IT brings them innovation.

### 5. Conclusion:

The main purpose of this study is to find the most influential factors that may affect/facilitate innovation in IT outsourcing firms operating in Karachi. The reason behind this case study is the sudden uplift of IT business in Pakistan especially in Business Process Outsourcing and IT outsourcing services to domestic and overseas firms. In order to investigate the role of innovation and to get the answer of the question that weather *Outsourcing IT services enhances innovative capabilities of an ITO firm/Company or not?*

### 6. Limitations and future research:

Only influential factors are the main focus of this study however, outsourcing as a business model innovation would also be an interesting line of reasoning for future research in order to highlight the role of innovation in outsourcing business.

### References:

- Ahmed. M, Raza. K & Shahid. R (2012) 'Causes of increasing demand of Employees Outsourcing and its Impact on Pakistan Business' International Journal of Learning & Development, ISSN 2164-4063, 2012, Vol. 2, No.3.
- Brusoni, S., Cefis, E and Orsenigo, L., (2006), 'Innovate or die? A critical review of the literature on innovation and performance', CESPRI Working Paper No. 179, Università Commerciale "Luigi Bocconi" – CESPRI Via Sarfatti, Milano, Italy.
- Dhar. S and Balakrishnan. B, (2006) 'Risks, Benefits and Challenges in Global IT Outsourcing: Perspectives and Practices' Available at: <http://www.isqa.unomaha.edu/dkhazanchi/teaching/ISQA4590-8596/Readings/Supplemental%20Readings/week%2012/Risks-Benefits%20and%20Challenges%20in%20Global%20Outsourcing.pdf>
- J. Gómez, C. Parra, V. Gonzalez, A. Crespo and P. Moreu de Leon (2009) 'Outsourcing maintenance in services providers' Safety, Reliability and Risk Analysis: Theory, Methods and Applications, ISBN 978-0-415-48513-5



5. Kobelsky. K & Robinson. M, (2009) 'The impact of outsourcing on information technology spending', International Journal of Accounting Information Systems 11 (2010) 105–119
6. Lin. Y, (2007) 'Factors affecting innovation in logistics technologies for logistics service providers in China'. Journal of Technology Management in China Vol. 2 No. 1, 2007 pp. 22-37.
7. Lojeski. K. S (2005) 'Managing Outsourcing Strategies to Ensure Sustainable Innovation Performance', Stevens Allaince Technology Management, winter 2005 Issue 1 Volume. 9. Available at [https://www.stevens.edu/howe/sites/default/files/lojeski\\_0.pdf](https://www.stevens.edu/howe/sites/default/files/lojeski_0.pdf)
8. Oshri I. and J. Kotlarsky (2011) "Innovation in Outsourcing", A WBS white paper for Cognizant.<http://valueofinnovation.com/>
9. Oslo Manual, (2005) 'Guidelines for collecting and interpreting innovation data' 3<sup>rd</sup> edition. Available at [http://epp.eurostat.ec.europa.eu/cache/ITY\\_PUBLIC/OSLO/EN/OSLO-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/OSLO/EN/OSLO-EN.PDF)
10. Ross. V. E, Kleingeld. A.W and Lorenzen. L (2004) 'A Topographical Map of the Innovation Landscape' The Innovation Journal: The Public Sector Innovation Journal, Volume 9 (2), 2004.
11. Sahin, Ismail (2006) 'Detail Review of Rogers' Diffusion of Innovations Theory and Educational Technology-Related Studies based on Rogers' Theory', The Turkish Online Journal of Educational Technology – TOJET April 2006 ISSN: 1303-6521 volume 5 Issue 2 Article 3. Available at <http://www.tojet.net/articles/v5i2/523.pdf>.
12. Schönteich. M, (2004) 'Outsourcing: Risks and Benefits' Ch 2. Private Muscle: Outsourcing the Provision of Criminal Justice Services. Available at <http://www.isn.ethz.ch/Digital-Library/Publications/Detail/?id=118361>.
13. Wang Y. J. & Koong K. S., 2006, 'Determinants of Global IT Outsourcing' Available at <http://swdsi.org/swdsi06/Proceedings06/Papers/MIS03.pdf>.

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