

INFORMATION TECHNOLOGY MANAGEMENT IN PAKISTANI ORGANIZATIONS: CURRENT STATE AND IMPROVEMENT OPPORTUNITIES

Muhammad Nadeem and Adul Hussain Shah Bukhari

Faculty of Information and Communication Technology, Balochistan University of
Information technology, Engineering and Management Sciences (BUITEMS) Quetta
Corresponding e-mail: Nadeem@buitms.edu.pk

Abstract

Like all over the world the organizations in Pakistan are making massive investments to establish and better manage the Information Technology infrastructures; to gain insight into the current state and business value returned from Information Technology Management initiatives, an investigation involving executives, managers and IT professionals of Pakistani organizations was conducted; these organizations belong to diversified domains. The investigation explored the Framework being followed to facilitate Information Technology Management and variation between expected and actual outcomes. The findings clearly show a number of areas the Information Technology was merely used as an operational resource for the organization rather than a strategic one; there was significant need to better align the Information Technology resources with the business functions; moreover there were cases where the expectations of the stakeholders related to the development and use of IT assets varied. This research identifies the general and specific weaknesses related to Information Technology Management in Pakistani organizations and suggests the remedies for improvement.

Keywords:

Information Technology Management, IT Infrastructure, IT-Business alignment, IT assets

INTRODUCTION

Organizations in Pakistan are making Massive investments to establish or Improve their Information Technology infrastructures, these Organizations face challenges e.g., The expected roi (return on Investment) is not achieved; the Information technology lead to The Technical complexities; the Organization is exposed to security Vulnerabilities; lack of Information Technology management Framework; and changing business Requirements etc.

The Motivation Factors

Exploring the strengths and weaknesses of the IT Infrastructure of Pakistani organizations was a major motivation factor for the author. The research specifically focuses the Pakistani ORGANIZATIONS SO THAT THE IMPROVEMENT

OPPORTUNITIES CAN BE IDENTIFIED IN CONTEXT OF PAKISTANI ORGANIZATIONS.

HOW THIS RESEARCH IS ORGANIZED

The research was conducted by questionnaire method and input of Information Technology staff working at different levels of government, semi government, and private organizations belonging to different domains (e.g., Banks, Health, Service providers, Software houses, etc.) was acquired, the questionnaire enquired almost thirty (30) different aspects of Information Technology of an organization.

Later on the responses were aggregated and weak and strong areas were identified, an area was considered to be "weak" area if 1/3 or more of the organization lack capacity in it; for example almost half of the organization lack a well documented IT Policy; so "Lack of well documented IT Policy" was termed as a weakness of Pakistani organizations. Similarly if

2/3 or more organizations were having enough capacity in an area it was termed as "strong" area; e.g., about 80% of the organizations think that "Information Technology is a reason for the survival of their organization", hence it shows the degree up to which the Information Technology has influenced the business processes.

Importance of Information Technology

Information technology (IT), as defined by the Information Technology Association of America (ITAA), available at www.wikipedia.org says "the study, design, development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware." IT deals with the use of electronic computers and computer software to process, convert, store, protect, transmit, and securely retrieve information.

As the organizations become more and more dependent on the Information Technology, the importance of better managing the same goes high significantly, organization do utilize the frameworks for better managing their IT infrastructures.

The ITIL (Information Technology Infrastructure Library) is a framework of best practices that facilitates the delivery of high quality IT services. Stuart Galup & Ronald Dattero (2007) found that the CCTA (Central Computer and Telecommunications Agency) of the UK Government developed ITIL in the 1980s in response to its growing dependence on Information Technology. The UK Government recognized that without standard practices, government agencies and private sector contracts were independently creating their own IT management practices and duplicating efforts.

LITERATURE REVIEW

Amirrudin Kamsin, (n.d.) in his research says: in the current era the Information Technology has been changing at a very rapid speed. There is no doubt that this pace has created opportunities, but at the same time several challenges have been created for the people responsible managing the Information Technology. Rapid IT change can intensify the

problems of managing the IT projects. One study estimated the rate of IT change as high as 30% per year and accelerating with the passage of time.

Achieving high Return on Information Technology Investment requires good management and governance of IT, as per the study conducted by Weill, P. (2004), it is predicted that the good management and governance of Information Technology can raise the Return on IT Investments as high as 40%.

An interesting study conducted by Adnan H. Yahya (1993), regarding the management of Information Technology in developing countries says that the third world countries pay much attention on the introduction of newer technologies in the economic planning however the poorly manager technologies are the cause of introduction a of new set of problems for such countries.

Joseph W. Weiss (2004) suggest in his research the three levels of utilization of Information Technology in different organizations, namely the "Operational Resource", "Strategic Resource" and the "Strategic Weapon", using IT as an operational resource is the least utilization of the technology and organizations having such setup cannot effectively use the IT in the business decision making process. However the later two levels the better understanding of the technology and its utilization.

RESEARCH METHODOLOGY

The research is focused to find out the strengths and weaknesses of the Information Technology infrastructure of Pakistani organizations. This section gives one by one discussions on the weak and strong areas identified in this research.

Weak Areas

First of all we will discuss the weak aspects of Information Technology Infrastructure of Pakistani organizations.

Sustainable IT Human Resources

As per the statistics collected, about 40% of the organizations lack the sustainable IT Human Resources, the faster pace of IT human

resource mobilization is a challenge for these organizations.

Effective IT Training Plan

The study shows that almost 65% organizations lack an effective training plan for the IT human resources; in researcher point of view it could be a possible reason of IT Human Resource mobilization at faster pace as identified in section 3.1.1.

Hindrance by staff to use IT Based systems

The research reveals that 40% of the organizations prefer to use the manual systems over the automated systems; this obviously creates an environment which is not mapped to the way of achieving the objectives of organization.

Lack of documented business processes

It is very necessary to have well documented organizational processes so that the organization can select suitable technologies to automate those. Lacking the documented and well defined business processes creates a chaos to utilize the IT in organization. This study shows that 56% of the investigated organizations lack the well documented processes.

Utilizing the IT in Business Decision Making

This study has revealed that 44% of the organizations in Pakistan utilize Information Technology merely as an operational resource rather than a strategic one. The IT systems are not effective enough to be used in business decision making process. In rest of the world all the critical business decision making is made using the IT based systems e.g., data warehouses, data mining, and business intelligence etc.

Lack of Well Documented IT Policy

52% of the organizations have reflected that they lack a well documented and effective IT policy. In author's point of view this is a critical factor, the organization with no clear objectives defined cannot achieve great success in their Information Technology Infrastructure.

Unsatisfactory ROI from IT Investments

The collected facts reflect that 48% of the companies are unable to achieve the targeted ROI from their Information Technology investments. The lack of well document business processes and IT policy are the key driving forces for unsatisfactory Return on Investments.

Managing the Changing IT Needs

The research findings show that Information Technology needs of 40% organizations change with the time, but are they able to manage these changes by creating compliance in Information Technology infrastructure is the important issue. Most of the times the IT infrastructure planning is not enough to manage the changing needs of the enterprise.

Lack of IT Management Framework

There are well known Information Technology management frameworks available with high acceptance ratio by the industry e.g., COBIT, ITIL etc. 40% of the organizations have not yet implemented any of such frameworks.

Lack of Evaluation

Evaluation of Information Technology system should be in place to find out the weaknesses and focus continuous improvement. 52% organizations do not have any evaluation and continuous improvement process in place which is quite alarming.

Problems Due to Outsourcing

Outsourcing is a very good option for an organization if they lack expertise in a specific area. But outsourcing itself requires management complexities e.g., how many organizations sign up the Service Level Agreements (SLAs) while outsourcing.

High Recurring Cost

42% organizations believe that the IT based systems have high recurring costs as compared to the manual systems; weaker management of the IT resources is a strong reason behind this fact.

Strong Areas

This section discusses the strong aspects of Information Technology Infrastructure of Pakistani organizations.

Increase in IT budget

IT budget should have a significant part in the overall organization's budget, 73% of the organizations have reported that their IT budget increases significantly every year.

Qualified IT Staff

Well qualified staff is key factor in any organization's success; the survey shows that 69% of the organizations are satisfied with the qualification of their staff, however rest of the 31% have failed to find well qualified IT personnel.

Cooperation between IT and non IT staff

"The IT staff faced hindrance by the non IT staff" was the hypothesis, however the current findings are not the same and 75% organizations report a friendly and cooperative environment between IT and non IT staff.

Coordination b/w Business and IT Managers

IT-Business alignment is dependent on the good coordination between the business and IT executives. The survey depicts that 69% of the organizations are lucky enough to have such coordination.

Familiarity with Latest Technologies

The competitive advantage can be achieved by constantly improving and upgrading the IT infrastructure. 75% organizations have reported that they are familiar with all the latest technologies available now-a-days.

Achieving Targeted Success in IT Projects

It is a general perception that the IT people over promise. The study shows that the 73% of the organizations achieve their targeted goals from their IT projects.

Encouraging the IT Initiatives

Encouraging the IT initiatives is a key to the establishment of strong IT infrastructure; this requires the commitment of the executive

management of the organizations. Current stats reflect that 77% of the organizations have a culture to encourage the IT initiatives.

Success of IT Initiatives

In continuation of the section 3.2.7, it was discovered that 79% of the IT initiatives prove to be successful; however the 21% organizations have report failure in most of their IT initiatives.

IT-Business Alignment

Technology to Business alignment is another key factor to the success of the IT infrastructure of any organization, having the technology setup exactly according to the business requirements accelerates the organizations towards the goals. In this study 73% of the organizations have reported us a good IT-Business alignment.

Flexibility / customization in use

75% of the organizations enjoy flexibility and customizations in use of the IT based systems, while rest of the organizations do not have flexibility and customization features in the systems deployed at their part.

High Availability, Reliability and Security

the organizations have reported about the high availability, reliability and security. 75% organizations believe that their IT systems have high availability, 73% organizations report their systems to be highly reliable while the same percentage of organizations report their IT systems to be secure enough.

Strong IT Infrastructure Deployed

79% of the organizations have rated their IT infrastructure to be strong enough to fulfill their needs.

IT as a Competitive Advantage

Information Technology infrastructure is believed to be a competitive advantage in current era of globalization, the findings of this research show that 92% of the organization are aware of this fact.

IT as a Reason of Survival

81% organizations have reported that Information Technology is a strong reason for their survival, and of course in the 21st century

the support of technology is indispensable for the businesses.

Use of IT by executives

It was an unexpected but a positive finding that executives of 81% of the organizations themselves use the IT based systems, which reflects their commitment to improve and deploy newer technologies in the organizations.

CONCLUSIONS

Information Technology can be a major contributor towards the growth of the country provided its management is given proper attention, with the help of well managed Information Technology Infrastructure the organizations of Pakistan can be more productive. The research has revealed the facts and figures specific to the Pakistani context which can be very useful for the government agencies like Ministry of IT, to take proper capacity building initiatives as they have been doing in the past.

FUTURE WORK / OPEN ISSUES

This research has contributed to find out the strengths and weaknesses of the IT infrastructures of Pakistani organizations, and provided a big picture of the current state. Tremendous efforts are still needed to remove the weaknesses and further strengthen and better manage the IT infrastructure. The authors recommend the customization and deployment of state of the art Information Technology Management Frameworks with reference to the Pakistani context.

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