ICT Enabled Organizational Transformation: A Socio-
Technical Perspective

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ICT Enabled Organizational Transformation: A Socio-Technical Perspective

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(January, 2017)
Dedicated to my Parents, Wife and Sweet Daughters
Ayesh, Minahil, Maira & Hareem Fatima
IN THE NAME OF ALLAH THE MOST MERCIFUL & THE MOST BENEFICIENT
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No portion of the work presented in this thesis has been submitted in support of any application for any degree or qualification of this or any other university or institute of learning.

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<tr>
<td>ACR</td>
<td>Annual Confidential Report</td>
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<tr>
<td>BPR</td>
<td>Business Process Reengineering</td>
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<td>CTO</td>
<td>Chief Transformation Officer</td>
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<tr>
<td>CKO</td>
<td>Chief Knowledge Officer</td>
</tr>
<tr>
<td>DGI&amp;P</td>
<td>Directorate General of Immigration and Passport</td>
</tr>
<tr>
<td>DG</td>
<td>Director General</td>
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<tr>
<td>ERP</td>
<td>Enterprise Resource Planning</td>
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<td>GIP</td>
<td>Global Integration Program</td>
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<td>HR</td>
<td>Human Resource</td>
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<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
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<tr>
<td>ICT</td>
<td>Information Communication Technology</td>
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<td>IS</td>
<td>Information Systems</td>
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<td>IT</td>
<td>Information Technology</td>
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<td>ITIL</td>
<td>Information Technology Infrastructure Library</td>
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<tr>
<td>ICM</td>
<td>Information and Change Management</td>
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<tr>
<td>FICO</td>
<td>Financial &amp; Controlling</td>
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KM : KNOWLEDGE MANAGEMENT
SCM : SUPPLY CHAIN MANAGEMENT
SECP : SECURITY AND EXCHANGE COMMISSION OF PAKISTAN
SOP : STANDARD OPERATING PROCEDURE
HRIS : HUMAN RESOURCE INFORMATION SYSTEM
LAN : LOCAL AREA NETWORK
MM : MATERIAL MANAGEMENT
MRP : MACHINE READABLE PASSPORT
NADRA : NATIONAL DATABASE & REGISTRATION AUTHORITY
RPO : REGIONAL PASSPORT OFFICE
SME : SUBJECT MATTER EXPERTS
TQM : TOTAL QUALITY MANAGEMENT
TKM : TRANSFORMATION AND KNOWLEDGE MANAGEMENT
UN : UNITED NATIONS
WAN : WIDE AREA NETWORK
ABSTRACT

This research attempted to understand the process of ICT enabled organizational transformation from a socio technical perspective in order to fill the research gap particularly in the context of developing countries. To explore various aspects relevant to transformation process four exploratory case studies have been conducted rigorously in public and private sector organizations in Pakistan. The transformation strategy and approach adopted by the top management of respective organizations at the outset of transformation initiative along with different measures taken so far to manage transformation endeavor have been explored through formal interviews of executives and staff members involved in organizational transformation process. Data triangulation technique was preferred for knowing and validating the facts gathered for further analysis.

The findings of this research reflect that the top management that preferred sociotechnical approach in order to implement transformation has successfully managed the transformation process as compared to the organization that just adopted technical approach and resultantly failed to achieve its transformation objectives.

Furthermore, it was also found that the proactive strategy of the top management regarding people, process and technological aspects appeared to be very fruitful in minimizing sociotechnical issues and challenges appeared during transformation process. Top management support and engagement, adoption of participative approach, collaboration and effective communication among stakeholders and team members resulted in transformation process to be smooth and eventually successful.
The participation of stakeholders (HR, IT and business process owners) and encouragement of top management to involve stakeholders in decision making contributed a lot in anticipating the complexity of issues and problems related to people, process and technology. Consequently, it helped the management in addressing and proactively managing issues and problems. The socio-technical issues faced by the management were also explored and explained along with remedial measures taken so far.

The major aspects such as people, process and technology were found as potential means regarding initiating, planning, implementing and sustaining organizational transformation. Furthermore, the enabling role of change management, knowledge management, business process management and IT governance led the ICT enabled organizational transformation to be smooth and successful. The means and enablers identified may play an effective and significant role in achieving objectives of transformation initiative leading to its success. Moreover, this research also elucidated that how potential enablers significantly contributed to manage the issues and challenges of organizational transformation, surely a challenging task. The understanding developed and lessons learned from this study led to propose a conceptual framework for successful implementation of ICT enabled transformation in the organizations.

The findings are major contribution towards understanding complexity of organizational transformation process. Furthermore, it provides guidelines to the organizations interested to be transformed for their survival in the current competitive world.
CHAPTER-1 INTRODUCTION

1.1 INTRODUCTION

This chapter presents the background and justification for ICT enabled organizational transformation. It begins by discussing the importance of the topic of this dissertation and also presents research objectives, research question, problem statement and significance of this research. Finally, it presents the overall structure of this dissertation.

Organizations need to be innovative in their products and services in order to have competitive edge. Organizational transformation seems to be a matter of survival to compete globally (Min and Santhapparaj, 2011; ). Some researchers have an axiom that organizations may die if they would be unable to introduce major changes in their work processes (Hall, 2002; Drucker, 1999). Public as well as private sector organizations are in constant state of flux and have a sense of feeling that why not such enterprises to be transformed to meet the current challenges of globalization, mergers, acquisitions new markets and innovative technologies (Davenport 2013; Eddy 2014, Shore, 2014).

The organizational transformation is not just a routine change but a fundamental change that substantially may alter an organization’s relationships with one or more key constituencies, e.g. customers, employees, suppliers, and investors (Rouse and Baba 2006). Transformation refers to making revolutionary changes to an organization’s setup to achieve desired results. Levy and Merry (1986) considered transformation as second order change. It is process driven, futuristic approach making fundamental changes in strategy, processes and technology in the organization. It is a comprehensive process of reinvention rather than more reorientation. Fundamental change in an organization may demand change in vision, mission, culture, structure, core process,
technology and people’s mindset. People, process and technology are the critical factors in any organization and need to be closely aligned in order to meet the long term objectives of the organization (Hammel and Prahalad, 1994). Drucker (1999) envisioned the importance and need of major change in the organizations to make these organizations efficient and effective. He predicted the important role of information and knowledge workers in the organization. This major change without implementation of ICT in the organizations may not be too productive to achieve the organizational goals. Organizations need to adopt futuristic approach towards customers, products and services to meet the challenges ahead (Laudon and Laudon, 2014).

Information Communication Technology (ICT) evolution has become the major driving force in initiating and introducing a major change in the organization (Hanna 2009). In the current era, ICT forced organizations to change their business approach in order to survive and compete in the global environment (Al-Debei and Al-Lozi 2012). It claims that the rules of business should be changed to get true benefits of new technology. The adoption of ERP also played revolutionary role to change traditional business processes by introducing the concept of Business Process Reengineering (BPR) in the organizations (Hammer 1990; Davenport, 1998). Today, organizations can hardly ignore the importance and strategic role of ICT that it plays for its effective functioning and introducing major change in the organization. The use of ICT is not only becoming an accepted but also an expected way of doing business successfully (Kim et al., 2007). ICT has been realized a key driving force for change in the organizations and it has enormous potential to transform organizational life (Venktraman, 1994). ICT enables organizations to provide unified access to corporate data; improve business processes; and communicate and collaborate with customers, suppliers and other organizations across the globe effectively and efficiently (Madapusi and D’Souza 2012a; Fischer 2014). The role of ICT in
transforming an organization is central in the current era. According to Makori et al. (2016) the adoption of smart technologies will play a critical role in reinventing the image of the organization in the current era. However, ICT may become a driving or inhibiting force to a successful change. The success rate of ICT enabled organizational transformation is questionable. Despite such challenge the top management still advocates that organizations need to be transformed using advance ICT technologies to achieve competitive advantages. Just adopting advance technologies is not panacea but considerations must be given to socio-technical aspects for transformation to be successful (Eddy 2014; Chen and Nath 2008; Nograšek and Vintar 2014). ICT enabled transformation is a demanding task and different challenges that an organization may face during the transformation process are needed to be explored in detail (Min and Santhapparaj 2011).

Roberts (2014) stressed the importance of four factors in ICT enabled organizational transformation. These factors are commitment, community, clarity and communication and ignoring these factors would result in failure of transformations. The failure of ICT enabled transformation is not only due to technical factors but it may be due to lack of consideration given to different aspects such as change management, communication, readiness, behavioral obstacles, commitment and mindset of the people (Roberts 2014). One of the major objectives of this research is to understand and identify the social and technical issues during the ICT enabled organizational transformation and to explore the strategies adopted by the regarding these issues and challenges

Hammer (1990) considered ERP systems as a major revolution in the organizations and these systems forced the management to introduce revolutionary changes in the organization. Organizations are adopting expensive and advanced ERP systems but seem unable to understand
and apply the true transformational potential of these systems (Chou et al. 2014; Eddy 2014).
The organizations are not getting the transformational benefits of enterprise systems even after
investing and deploying huge resources for these systems (Davenport 1993). The organizations
unable to understand the transformational potential of technology might be forced out of
business (Qingfeng et al., 2008). It may be speculated that ERP systems are implemented so far
using the traditional approaches of automation rather than transformation follow the old
philosophy of first order change.
Organizational transformation in the context of ERP is often assumed rather than examined and
there has been comparatively little ERP research reflecting the experiences of companies in Asia
in general and on the topic of transformation in particular (Molla and Bhalla 2006). There is a
need of research to understand the pre and post aspects of ERP systems implementation in the
context of transformation rather than considering these systems as simple change i.e. first order
change (Rouse and Baba 2006).

Some organizations have implemented ERP systems in the context of transformation but unable
to achieve the desired results (Mattila et al. 2011; Madapusi and D’Souza 2012). These systems
were implemented using the techno centric approach. It seems that these systems were not
implemented keeping in view the major changes required in processes, people mindset and
culture of the organization.
Organizations are using different approaches for technology enabled transformation and are
experiencing numerous challenges (Boersma and Kingma 2005; Min and Santhapparaj 2011)
that need to be addressed. Organizations may overcome such challenges of transformation
through consensus for cross-functional change, getting top management consistent support
throughout the transformation process, managing issues relating to employees’ resistance and
also helping them to make such changes as part of their daily routine work (Min and Santhapparaj 2011). ICT enabled organizational transformation is a challenging task and need further investigation for better understanding of the complex phenomena (Besson and Rowe 2012; Pan et al., 2007, Kim et al., 2007).

Organizational transformation is considered a new frontier for strategic information research, hence there is a need to explore this phenomenon of organizations involved in Business Process Reengineering (BPR), ERP projects and enterprise transformation (Besson and Rowe 2012). The important role of Business Process Management (BPM) by considering impact of changes in process on technology and people has been advocated by David (2016). The relevant past research studies advocate to understand the complex phenomena of organizational transformation and further to explore the efforts made by the management to make this transformation successful in organizations (Molla and Bhalla, 2006).

To understand the transformation phenomena in its true spirit, there is an imperative need to study organizations trying to get them transformed to survive in a dynamic environment through a socio-technical perspective (Oden, 1999; Besson and Rowe 2012). This research is an attempt to understand the process of ICT enabled organizational transformation along with its potential challenges keeping in view the socio-technical perspective.

1.2 Research Gap
The organizations are not getting true benefits of technology enabled transformations (Levy and Merry 1986; Madapusi and D’Souza 2012; Uhl 2014). The success of technology enabled organizational transformation is therefore questionable. The inability of the organizations to implement ICT successfully is due to the techno-centric approach adopted and only planning for
the technical aspects of change (Eason 2001). It may be speculated that organizations are using only the technology lens rather than considering it from socio-technical perspective that ultimately leads to disappointing outcomes of the transformation process. ERP systems are socio-technical systems and most of the problems faced by the organizations are social instead of technical (Hammer and Champy 1993). Past research mostly identified the technical issues rather than social ones so there is a need to understand and explore the social issues relating to the transformation process (Ojiako and Maguire 2008) and more importantly how such issues would be addressed by the management (Nograšek and Vintar 2014).

The importance of enterprise transformation is being realized in the organizations working in the developed countries. It is very unfortunate that transformational potential of ICT has not yet been properly realized in the public/private sector organizations of developing countries (Hanna 2009). The past research findings regarding ICT based transformations carried out in developed countries may not be fully applicable in their true sense in developing countries because of varied social, cultural and environmental factors so there is a need to extend research endeavors to understand ICT based organizational transformation particularly in the developing countries (Hanna 2009; Mattila et al. 2011). Moreover, the success rate of enterprise transformations is not encouraging and it is considered as one of the challenging tasks for the top management (Rouse and Baba 2006; Marketwired 2014).

The failure rate of enterprise transformations is disappointing; more than 50% of transformation initiatives are considered as failures in the past research (Ojiako and Maguire 2008; Uhl 2014). Despite the high failure rate of technology enabled transformation, the top management of the companies still consider its adoption on top priority for their companies (Eddy 2014). There is a dire need to understand the complex phenomena of enterprise transformation process along with
the efforts required for the successful management of transformation initiative in the organization (Molla and Bhatta 2006).

The role of socio-technical theory in ICT enabled organizational transformation is well recognized in the past research (Chen and Nath 2008; Nograšek and Vintar 2014). In order to understand transformation process there is a need to consider hybrid approach of social and technical perspectives in the organization (Orlikowski and Barley 2001). It seems difficult to approach the transformation phenomena in-depth by considering each perspective i.e. social, technical in an independent way; none of them can be ignored during the transformation process. The social and technical systems are interdependent so due importance should be given to these factors while initiating research for technology enabled transformations in the organizations (Besson and Rowe 2012).

1.3 PROBLEM STATEMENT

Organization’s track records regarding transformational change attempts are not very encouraging. There exist more failure cases of transformation as compared to success as reflected in the past research. Technology enabled transformations attempt made by the organizations seems to be just automation rather than transformation. At present the technology enabled enterprise transformation is under researched area in the context of developing countries. The majority of transformation efforts are failing to produce intended business results.

The research conducted in the developed countries reflects that success rate of technology enabled enterprise transformation is questionable. There exists an axiom that most of such failures may be due to organizational and social problems. Organizations mostly depend on
technology hype rather than socio-technical perspective, an imperative during transformation process.

There is a lack of research addressing on technology enabled enterprise transformation in the context of socio-technical perspective so there exit a quest for understanding the phenomena deeply. Although organizations are investing heavily on ICT systems like ERP but the true benefits gained are questionable. So called technology enabled transformation may lead to just automation, so the benefits gained are questionable. ICT enabled organizational transformations are not getting what they want and it invites researcher to look in to the matter considering socio technical perspective and feasible solutions concerning organizational transformation issues. The expected benefits of implementing ICT in the organization are not achieved; therefore, this phenomenon needs to be studied in socio-technical perspective.

1.4 RESEARCH OBJECTIVES

- To understand and explore the strategy of ICT enabled organizational transformation
- To understand and explain the process of ICT enabled organizational transformation
- To identify the socio technical issues/challenges faced during the transformation process and how such challenges have been addressed
- To identify key lessons learned that will be of potential value to other organizations seeking to develop or improve their transformation process

1.5 RESEARCH QUESTIONS

The research question of the study is:

How organizations are being transformed through ICT?
In order to address this question the following aspects need to be explored

- Which strategy was preferred by the management to proceed with transformation initiative?
- Which potential means are necessary for transformation?
- How transformation initiative was managed?
- What strategy was used by the organization to manage the transformation process?
- What socio technical challenges were faced and how these were addressed?

1.6 SCOPE OF RESEARCH

In order to address the above questions, exploratory case study research has been conducted in four public and private sector organizations in Pakistan. The organizations those have been transformed or are under transformation process would be potential candidate to be considered to carry out this research. The transformation process was studied keeping in view the socio-technical perspective.

1.7 RESEARCH METHODOLOGY

Keeping in view the research questions and objectives of this research, the case study research method was considered to be more suitable for this research. The case study research method provides an opportunity for the researcher to examine in depth a single entity or a particular event in its context (Franz and Robey1984). ICT enabled organizational transformation is an important and emerging areas of IS research and valuable insights for new topics of IS field could be gained by using case research (Benbasat et al. 1987).
The objectives and research question of this research demand context specific, in depth study of the process of ICT enabled organizational transformation. To explore socio-technical issues and challenges, exploratory case study seems to be suitable for this research.

1.8 SIGNIFICANCE OF RESEARCH

1.8.1 Area of research and its importance

ICT enabled enterprise transformation phenomena have become the focus of organizational research while enterprises are experiencing ever larger and more complex organization transformation phenomenon than before (Qingfeng et al., 2008).

The top quality journals are encouraging and publishing research on this important issue of organizational transformation. The MIS Quarterly 2015 executive special issue has invited researchers to conduct research and called for papers on the important issues of Enterprise Transformation Management.

This specific discipline i.e. ICT enabled Transformation is popular among the academia and practitioners community. The journals like “Journal of Enterprise Transformation” and “360\degree The Business Transformation Journal” are dedicated for publishing research on this important discipline. The academia and practitioners are encouraged to publish research in these journals. It reflects the importance of the research domain.

ICT enabled organizational transformation is an emerging area and there are not well established theories and need further research (Besson and Rowe 2012). The enabling role of ERP systems in the organizational transformation not only remained the important consideration of the
management but also of the research community to extend the understanding of this particular aspect (Rouse 2006; Besson and Rowe 2012; Eddy 2014). The understanding about the complexity of this phenomena in the context of disruptions also stressed by Timmerman and Salden (2017).

1.8.2 Theoretical Contribution

This research considered the socio-technical perspective to understand the phenomenon of ICT enabled organizational transformation. This research may explore how socio-technical System (STS) theory may contribute in organizational transformation to be happen in smooth way. STS has been used mostly for designing systems and individual task structures, it has not been used extensively at organizational level (Owden, 1999). People, process and technology are three important pillars in the organization so the organizational transformation phenomenon was studied keeping in view these three aspects. The main premise of this theory is based on the concept of organizations as systems. This research will also use the same approach and will consider organization as system. This research may also provide basic assumptions leading to some theoretical framework addressing potential means and enabling/supporting activities for successful transformation of organizations.

1.8.3 Managerial Implications

This research is aimed at enhancing the “understanding” of enterprise transformation phenomena more rigorously. It may help the organizations to be familiar with socio-technical issues those may be faced during transformation process. Moreover, it may also help in enhancing their competencies in technology based enterprise transformation. Understanding transformation
efforts made by different organizations for their transformation consequently may facilitate the management to know in depth the process of enterprise transformation, potential challenges and issues relevant to this phenomenon. The lessons learned regarding ICT enabled organizational transformation will be of potential value for the management of future organizations. The management would be able to understand the socio-technical challenges and their remedial measures taken, and how to successfully manage the complexities of process of ICT enabled organizational transformation in organizations.

1.9 STRUCTURE OF DISSERTATION

The layout of the dissertation is in a logical sequence, beginning with the introduction to the study in chapter 1 to the conclusions and future research directions chapter 6.

Chapter 1 (Introduction) reflects the introduction of the research work presented in this thesis. The need and significance of ICT enabled organizational transformation has been discussed in this chapter. The research objectives and broad research questions are also explained in this chapter. Finally, it gives a brief overview of the other chapters of this thesis.

Chapter 2 (Literature Review) provides details about the transformation phenomena like its definitions, difference from change and some historical context. Since the focus of this research is on ICT enabled organizational transformation, therefore the details about these aspects are explored from literature. Moreover, the role of ERP systems in ICT enabled transformation has also been discussed. Some details about relevant theories and models have also been discussed to develop some understanding about this phenomenon.
Chapter 3 (Research Design & Methodology) presents details about the research design, research method, data collection tools and approach used for data analysis. This chapter also discusses the suitability of qualitative approach and moreover, it justifies the Case study methodology for this research. The research questions and research objectives clearly reflect the need of qualitative approach and the method suitable for this research seems to be case study. ICT enabled organizational transformation is a context specific phenomenon and to develop understanding about this phenomena case study was most appropriate as discussed by most of the gurus of this field like Binbasat, Yin, Merriam, Eisenhardt, Cresswell and Miles and Huberman. The details about the research design for this research were also discussed in this chapter.

Chapter 4 (Case Studies) presented details about four case studies conducted in public and private sector organizations in Pakistan. The transformation efforts of four different organizations were discussed separately. The objective of each case study was to develop understanding about the complex phenomena of ICT enabled transformation. The case studies mostly covered points related to identifying needs for transformation, approach for transformation and efforts regarding change in people, process and technology related aspects in the organization. The socio-technical issues and remedial measures are also discussed in these case studies.

Chapter 5 (Discussion/ Analysis) presented discussion and analysis on each case study separately by analyzing the results of case with the help of literature review. Finally, integrated discussion and analysis also discussed in order to present the overall understanding made from this phenomena. The overall understanding about ICT enabled organizational transformation has
been developed on the basis rigorous analysis of four case studies. The findings from four case studies were taken into consideration before presenting conceptual framework for ICT enabled organizational transformation.

**CHAPTER 6** (Conclusion) presents the conclusion and recommendations for successful implementation of ICT enabled organizational Transformation in the organization. The future research directions are also discussed.
CHAPTER 2. LITERATURE REVIEW

2.1 INTRODUCTION

This chapter presents review of past research related to organizational transformation. The appearance of research topics concerning radical change in organization may be traced back in 1980’s as such theme appeared in organizational studies (see Pettigrew, 1985). The book “Awakening Giant” written by Pettigrew addressed how Imperial Chemical Industries responded to the changing social, business, political and economic environment from the 1960 to 1980. Moreover, the author says “The process of assessing environmental change and its implications for new strategies, structures, technologies, and cultures in the firm is an immensely human process in which differential perception, quests for efficiency and power, visionary leadership skills, the vicariousness of chance, and subtle processes of additively building up a momentum of support for change and then vigorously implementing change, all play their part” (Pettigrew, 1985, p. 31)

The term Information Communication Technology (ICT) encompasses a number of aspects related to computing, communication and technology and it is very common now a days and more recognizable than ever before. The penetration of ICT in every area of life is an obvious fact. The significance of such technologies was realized even ln 1973 as Daniel Bell in his seminal work mentioned the tendency of industrialized countries to move towards Information Society. As the computer technology grew and its use to carry out work processes efficiently led to implementation of Information Systems in 1980’s that mostly dealt with automation of work process to be efficiently done. Since then a rapid change surfaced in organizations due to innovation in ICT that enforced change in organization particularly in work process and
managerial decision making process. The work processes, structure, people are subjected to ICT influence when adopted by organizations. The past research in Information Systems reflects that change in organizations may be influenced by Information Technology (IT), people, structure and consequently may impact services and performance (Kotter, 1995, Guha et al., 1997). The relationship between IT and organizational change has been studied in past research and is well recognized (see Robey and Boudreau, 1999; Markus and Robey, 1988; Leavitt and Whisler, 1958).

ICT seems to be crucial for exploiting business opportunities and further long term survival of organizations (Orlikowski, and Yates, 2006). The rapid change in ICT and adoption of Information Systems in organizations have changed the way organization do their business and consequently transforming business processes, organizations and society in a fundamental way. The notion of information society indicates a shift of economic resources from traditional productive functions (i.e. industrial and agricultural workers) to information processing and distribution (Keil et al., 2001). Such a shift highlights the value of information whereas information is also considered as an asset like other tangible assets in organizations.

The Enterprise Resource Planning systems were not commonly available in early 80’s when the concept of Organizational Transformation (OT) was born (Besson and Rowe, 2012). However, today the organizations are adopting ERP systems for smooth running of organizations and competitive advantages. Besson and Rowe (2012) considered OT as multidisciplinary phenomenon and an important theme in his review. Furthermore, they said (p. 104) “….. information systems are considered to be major asset for leveraging organizational transformation owing to disruptive nature of IT innovations, the deep digitalization of business and their cross-organization effects, notwithstanding the amounts of investments in enterprise
systems”. Similarly, Matilla et al. (2011, p. 10) found that “ES [Enterprise Systems] played a dual role of deinstitutionalization by providing tools of re-structuring, controlling and decision making, as well as performance measuring and gradually becoming an agent in the reinstitutionalization process”. The findings reflect the ERP systems implementation cause change in organizations. The process of such change requires to be understood along with the challenges that may be because of adoption of ICT and further implementation of IS in the organizations. Furthermore, success of OT is questionable as the past research findings delineate more failure than success stories (Uhl, 2014, Heeks, 2002, Ojiako and Maguire, 2008, Rouse, 2011). The review of such aspects may help to understand the phenomenon of such change leading to organizational transformation regarding its complexity. How do adoption of ERP systems transforming the organization (i.e. IS-Enabled transformation) invites researcher’s attention to rigorously study the process of organizational transformation for profound understanding of such a complex phenomenon.

The review may be beneficial in understanding and analyzing the phenomena of ICT enabled organizational transformation. It may also help to be acquainted with what had already been done in the area under research. ICT enabled organizational transformation issues and challenges may be identified and critically reviewed that may lead to identifying research gap that still need to be researched.

2.2 WHY DO ORGANIZATIONS NEED TRANSFORMATION?

Public as well as private sector organizations are in constant state of flux and these enterprises need to be transformed in order to deal with challenges of globalization, mergers, acquisitions new markets and new technologies (Eddy 2014). The organizations of the current era may be
unable to respond the challenges of 21st century by introducing incremental changes, so to adopt revolutionary changes in the organization is today's need (Hammel & Prahalad, 1994). Transformation seems to be a matter of survival to compete globally. Some researchers commented that the organizations will die if they would be unable to introduce major change in the organization (Hall, 1999; Drucker, 1999). It is fact that ICT revolution has become the major driving force initiating and introducing major change in the organization (Hanna 2009). It claims that the rules of business should be changed to get true benefits of new technology. Internet forced organizations to change their business approach in order to survive and compete in the global village (Al-Debei and Al-Lozi 2012). The adoption of ERP is another revolution and it has forced the organizations to change their traditional business processes by introducing the concept of BPR in the organization (Hammer 1990).

Organizations need to be innovative in their products and services. They need to adopt futuristic approach towards customers, products and services (Hammel & Prahalad, 1994). The customer will become part of design and development process. The need of customized products forced organizations to change their perception about customers as well as vendors (Molla and Bhalla 2006). The need of state of the art supply change systems demand end to end business process integration and major change in the existing process (Qingfeng et al., 2008).

Kim (2005) stressed the importance of major change by adopting a different approach towards competition. He forced organizations to be transformed in order to make competition irrelevant. The organizations cannot survive in the long run by just planning to compete in the existing market, rather they need to develop strategies transforming from Red Ocean to Blue Ocean. Companies are trying to get share from the existing market in the red ocean strategy, whereas in
Blue Ocean they are making competition irrelevant by creating new market space. This is not possible until and unless organizations adopt the philosophy of 2\textsuperscript{nd} order change i.e. transformation by using advance ICT systems in the organizations. The detailed explanation about the seven drivers of organizational transformation may help in understanding the need of organizational transformation from different perspective (see Anderson and Ackerman, 2001).

\textbf{2.3 ORGANIZATIONAL CHANGE: HISTORICAL PERSPECTIVE}

The change is an ongoing process that may provide opportunities and challenges. However, it seems to be very difficult to predict them at the outset. The demand for change may become from external, internal or both forces affecting organizations (Child and Kieser, 1981; French et al., 1999). Kanter et al., (1992) mentioned globalization, Information Technology and industrial consolidation that might cause change in the organization. and took change perspective in terms of shift in behavior of the whole organization. Usually organizations are being influenced by changes in its environment so resultantly there might exist a need of adapting work processes (Senge et al., 1999). The researchers have advocated that change initiatives should be planned rather than incidental in nature (Robbins, 1990; Dunphy and Stace, 1993). Orlikowski and Hofman (1997, p.11) suggested that there exists discrepancy between how people think about technological change and how they implement it and consequently such discrepancy may contribute significantly towards difficulty and challenges that organizations face on attempting to introduce and implement technology-based change. The technological driven change has their roots in Lewin’s three stage change model of “unfreezing”, “change” and “refreezing”. The model depicts that organizations prepare themselves for potential change and after implementing it they made endeavors to be stable at the earliest possible.
Anderson and Ackerman (2001) mentioned change perspective for the three decades (i.e.1970-1990). It can be summarized as under:

- Before 1970: the focus of the top management was only on market share. They were giving less attention to customers, competitors and external environment.
- During 1970s: technology, innovation, de-regulation challenged different industries and management has to review strategy and focused on increasing products and services.
- Late 70s: the management focused on organizational improvement through restructuring, downsizing, work redesign, quality and process improvement.
- Mid 1980s: focused on total quality management TQM.
- Early 1990s: Focus on Reengineering and ERP systems.

The change efforts being made by organizations up to 1980s seemed to be that more importance was given to technological aspects for improvement whereas social and behavioral aspects relating to people were overlooked. Laudon and Laudon (2014, p112-113) took organizations as “a stable formal social structure” that take input from environment and produce output (i.e. Behavioral view) whereas the Technical view of organization concerns how input are processed to produce output when technology is introduced in the organization. Moreover, they mentioned that business process in any organization are supposed to “set of logically related tasks and behaviors that organizations develop over time to produce specific business results” (Laudon and Laudon, 2014, p. 41). So, consideration of behavioral aspects seems to be important too for improving organizational performance. The organizational effectiveness is deeply concerned with organizational environment, strategy, working culture, technology and work processes (Gibson et al., 2000). In such scenario, any change expected in the organization not only affect
working environment but also cultural aspects and such change always require proper management to be acceptable to people concerned working in the organizations.

The adoption of ERP systems in early 90’s as mentioned above may lead to change in organization. ERP systems are considered as innovative – an “idea, practice, or object perceived as new by an individual or other unit of adoption” (Rogers, 1995). Klein and Sorra (1996) described implementation of any innovation as “The process of gaining targeted employee’s appropriate and committed use of an innovation”. The introduction of innovative technologies in organization requires change management for expected benefits to be achieved. Benjamin and Levinson (1993) suggested change in the area of technology, business process and culture due to new IS required to be managed through change management. Change management may be considered as a critical factor during implementation phases of ERP systems (Somers and Nelson, 2004; Al-adwani, 2001). Laudon and Laudon (2014) mentioned that “managing change is neither simple nor intuitive” so the organization committed to extensive improvement in work processes should develop suitable change management strategy.

2.4 DIFFERENT FACETS OF CHANGE

The different facets of change such as planned or accidental, evolutionary or revolutionary (French et al., 1999), anticipated, emergent or opportunity based (Orlikowski and Hofman, 1997) may have its magnitude small or large. Regarding degree change Wilson (1992) proposed four levels ranging from ‘status quo’ to ‘revolutionary transformation’. Detail is delineated in Table 2.1.
<table>
<thead>
<tr>
<th>Degree of change</th>
<th>Operational/Strategic Level</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status quo</td>
<td>Can be both operational and strategic</td>
<td>No change in current practice</td>
</tr>
<tr>
<td>Expanded reproduction</td>
<td>Mainly operational</td>
<td>Change involves producing more of the same (goods or services)</td>
</tr>
<tr>
<td>Evolutionary transition 3</td>
<td>Mainly strategic</td>
<td>Change occurs within existing parameters of the organization (e.g. change, but retain existing structure, technology etc.)</td>
</tr>
<tr>
<td>Revolutionary transformation</td>
<td>Predominantly strategic</td>
<td>Change involves shifting to redefining existing parameters. Structure and technology likely to change, for example.</td>
</tr>
</tbody>
</table>

Table 2.1 Levels of organizational change (Adapted from Wilson, 1992)

Palmer et al. (2009) mentioned a controversial point of view of some commentators who considered organizational change prior to the mid-late twentieth century likely to be incremental and infrequent whereas by the latter part of the century the change was significant and more traumatic. On the other hand, some other commentators argued that radical or discontinuous change is not new to the current period but is something that occurred between 1900 and 1950.

The term ‘change’ described everything that needed to be different in organization before 1980’s (Anderson and Anderson, 2001). However, later on Ackerman(1986) defined three type of change that might occur in organizations and termed it as “Developmental”, “Transitional” and “Transformational”. The author further mentioned that Developmental change represents improvement of existing methods, skills, performance standards, or condition that did not measure up current or future needs. It’s the simplest one among the three types mentioned. The primary assumptions are that people are capable to improve and they will improve if they will be provided resources and motivated. Transitional change is complex and “replaces what is with something entirely different”. Transitional change was named and defined and differentiated it as
“old state”, “new state” and “transition state” (Beckhard and Harris, 1987 cited in Anderson, 2001). Transformational change represents radical shift from one state of being to another and it requires shift of behavior, culture and mindset for successful implementation and sustainability over time. Fig. 2.1 depicted three types of changes explained above.

![Three Types of Change](image)

Fig. 2.1 Three types of change Adapted from Anderson (2001)

The definitions and different facet of change mentioned above detailed about the basic concepts and how scholars took it with the passage of time. It stems from the above paragraph that there exits different types of change that an organization may face or embrace during its life cycle.
There exists a point of view that “…Organizational Transformation Phenomenon is inherently complex, and hence, no one theory is sufficient” (Cha et al., 2015, p. 1756). The organizational transformation has been labelled differently as a radical change, strategic change, revolutionary change, and strategic renewal in the literature concerned (see Besson and Rowe, 2012). There exist diversity of definitions and interpretations in literature regarding the term “transformation” (Nadler and Tushman, 1989; Hinings and Greenwood, 1988; Besson and Rowe, 2012). The term organizational transformation still needed to be clearly understood prior to looking into its complexity. It is not universally accepted concept so one can explore its various aspects and approaches used (King, 1997, Tondnem 2005). Despite ICT-enabled organizational transformation has invited attention of researchers for a couple of decades there is lack of theoretical clarity in this area of research (Basson and Rowe, 2012). Furthermore, there seems to be no consensus on what constitute IT-enabled organizational transformation so theoretical foundation for its concept is also needed (Cha et al., 2015).

A common definition of Organizational Transformation resulted after discussion in a conference by Corporate Renewal Centre was “A fundamental change in organizational logic which resulted in or was caused by a fundamental shift in behaviors” (Muzyka et al. 1995, p. 5). Rouse (2005, p.279) defined organizational transformation as “ … change, not just routine change but fundamental change that substantially alters an organization’s relationships with one or more key constituencies, e.g., customers, employees, suppliers, and investors”. Thus, definitions delineated reflects that organization transformation is radical change rather than continuous or just a routine change in any organization. The change in organization may be about change in organizational strategy, innovative technological development, restructuring of organization, change in work processes,
procedures, culture and its impact on organization. Repercussion may appear if change is not
being managed during its initiative and execution.

Levy and Merry (1986) took the challenge of publishing book on this important and emerging
topic of “Organizational Transformation”. They tried to explain the term organizational
transformation after summarizing the characteristics of first order and second order change made
by compiling the work of more than 19 authors from the different fields of management,
organization theory, learning theory, planned change and change theory. According to them
organizational transformation is a second order change having characteristics like
multidimensional, multi-level, qualitative and revolutionary change. Although they have tried to
define organizational transformation by incorporating different aspects but still different
researchers are defining organizational transformation differently.

Rouse (2005) emphasized on fundamental change and considered organizational transformation
as fundamental change that significantly changes relationship with all the stakeholders like
customers, employees and vendors in the organization.

Organizational transformation is considered as planned change with an objective to improve
overall performance in the organization by emphasizing on change in the behavior of majority of
the people in the organization (King, 1997).

From the literature, it can be inferred that the organizational transformation may comprise of
“introducing fundamental changes in people mindset, processes and technology” in the
organization. Organizational transformation possesses the characteristics of second order
change.
In addition to behavioral change in people the efforts related to fundamental change in processes through business process reengineering (BPR) is also considered as revolutionary approach of transformation by some of the authors (Hammel & Prahalad, 1994; King, 1997). The focus of introducing such changes through BPR would be on whole process rather than an activity in the organization.

2.5.1 Transformation Strategy

Anderson and Anderson (2001) published a book title “Beyond Change Management” and the main theme of this book is leading transformations successfully. They discussed the strategies of different leaders for the successful transformation. After comparing success stories of different companies, they finally recommended the following transformation strategy based on three elements i.e. content, people and process.

1. **Content:** It refers to questions like why organization needs to change and strategy about changing structure, processes, technology and work practices

2. **People:** It refers to the behaviors, emotions, minds and spirits of the stake holders who are either involve in planning, designing, implementing major change or being impacted by the change.

3. **Process:** It refers to how the content and people changes will be planned, designed and implemented.

In order to move organization from the current state to the future desired state successfully it is important to integrate these elements in to one unified transformation effort. An integrated conscious approach needs to be followed. Treating content change or people change separately
will result in failure of transformation efforts (Srinivasin and Nightingale, 2011). Anderson and Anderson (2001) also identified the importance of approach adopted by the management in addition to formulating strategy in the organization. They discussed two approaches i) conscious also called expanded awareness and ii) unconscious also named limited awareness or reactive. The organizations based on conscious approach may develop proactive strategies about people, process and technology whereas organizations based on unconscious approach may develop reactive strategies during the transformation process. It may be speculated that organizations failed may ignored any one of these elements of strategy or did not realize the importance of conscious transformation approach regarding people, process and technology.

Levy and Merry (1986) also discussed various types of transformation strategies like top down and bottom up. The top down strategies are initiated by the senior management and collaborative in nature. Whereas the bottom up strategies of transformation dealt with some problems normally top management avoid. The main focus of such strategies is power, politics and conflict management. The organizations experienced different results like success as well as failure after adopting such strategies. The authors realized the need of exploring second order change by exploring the strategies developed and adopted by the management along with the outcome of such strategies.

ICT enabled organizational transformation is a new and complex phenomena and need deep understanding, how organizations manage these three elements (people, process and content) successfully is a challenging task and need to be explored (Anderson and Ankerman, 2001; Min and Santhapparaj 2011). One of the main objectives of this research mentioned in chapter 1 is about understanding the process of organizational transformation from a socio-technical
perspective. The case studies were conducted to understand the approach adopted by different organizations while initiating transformation process.

2.5.2 Organizational Transformation: Relevant Theories

ICT enabled organizational transformation is a new and emerging phenomenon (Hughes, 2015). The Journal of Enterprise Transformations has encouraged the practitioners and researchers to contribute in this field by exploring the phenomena of transformation and suggesting some frameworks and models. The frameworks, models and theories in this field are not established and failure rate of transformations still demand rigorous research in this field (Rouse, 2011; Qingfeng et al., 2008).

2.5.2.1 Enterprise Transformation Theory

The theory focuses on why and how transformation happens, as well as ways in which transformation is addressed and pursued in terms of work processes and architecture of these processes. Enterprise transformation concerns change not routine change but fundamental change in processes, structure and people mindset (Rouse & Baba, 2006).

According to Rouse (2005) “enterprise transformation is driven by experienced and/or anticipated value deficiencies that result in significantly redesigned and/or new work processes as determined by the management decision-making abilities, limitations, and inclinations, all in the context of social networks of management in particular and the enterprise in general”. Transformation initiatives involve addressing what work is undertaken by the enterprise and how this work is accomplished. The theory of enterprise transformation could be understood by considering transformation from the following three important perspectives:
i) **Value deficiencies:** It refers to the perceived value deficiencies relative to the needs or expectations due to experienced or expected downside losses of value; or failures to meet projected or promised upside gains of value; desire to achieve new levels of value. Only fundamental change i.e. transformation can solve the problem of value deficiencies.

ii) **Work processes:** it refers to performing current work differently by transforming the enterprise like web enabled customer service. Organization can outsource their activities like manufacturing and focus on services. The work of an enterprise can be characterized in terms of hierarchy of purpose, objectives, functions, tasks and activities. Transformation of work will pursue all levels of this hierarchy.

iii) **Attention and resources:** It includes **external variables** (customer, competitors, demand interest rate etc.) and **internal variables** (resources and their allocation among work processes). Transformation involves allocating attention and resources to adapt and anticipate changes of external variables. The ability of enterprise to redeploy its human, financial and physical resources is central to the nature and possibility of transformation.

iv) **Decision making:** it refers to how managers address change in different stages of transformation and how the transformation activities are initiated, planned, designed and implemented in the organization. The role of managers as leaders rather than problem solver is also important aspect of transformation.

v) **Social networks:** It refers to the knowledge sharing among the networks in the organization. Social networks play an important role in the transformation process of an organization.
Rouse (2005) identified the need and importance of studying transformation process of organizations and exploring the role of different means. It is important to understand the process of transformation and try to answer the question “how transformation happen?"

### 2.5.2.2 Emerging Theory of Enterprise Transformation

Kotnour (2011) contributed in the field of organizational transformation by introducing emerging theory of enterprise transformation shown graphically in Fig3. The following section will discuss the details of this theory.

![Diagram of Emerging Theory of Enterprise Transformation](image)

Fig.2.2 Emerging theory of enterprise transformation adopted from Kotnour (2011)
The main focus of this theory is based on:

“Higher alignment of the enterprise transformation approach with the transformation need, internal context, and transformation challenges will lead to a higher overall performance of the transformation”

The focus of this theory is on alignment of transformation, how well the transformation need, internal context and transformation approach are aligned to produce desired results of transformation and achieve overall performance. Kotnour further explained the performance of transformation from three perspectives, i) The transformation readiness, ii) providing consistent purposeful support and iii) effectively implementing changes in the organization.

Kotnour further discussed the need of some more research regarding understanding the process of transformation and exploring transformation approaches of different companies regarding introducing fundamental changes related to people, process and technology. He has not only general guidelines but also provided the list of some research questions to explore and understand this phenomenon in detail. Enterprise transformation is a new field and the theories of this field are not mature and there is a need of more research to understand this complex phenomenon (Rouse and Baba, 2006; Chen and Nath 2008; Nair et al., 2014).

How transformation would happen? In order to address this question, the relationship between technical and social systems need to be explored and further explained. Both social and technical systems are interdependent as the technical systems are being managed by the people. While initiating research for technology enabled transformations in the organization, both social and technical aspects must be given due importance to understand the complex phenomena of transformation (Besson and Rowe 2012). In order to understand the complexity and challenges of organizational transformation process, it is direly needed that the relevant aspects may be
explored and documented at its best (Pettigrew et al., 2001; Rouse and Baba, 2006; Chen and Nath 2008; Nair et al., 2014). Moreover, how organizations manage people, process and technology successfully may further be investigated for its deep understanding (Min and Santhapparaj 2011).

2.5.2.3 Socio-Technical System (STS) theory and its importance

The organizations are socio-technical systems in its nature. People are essential part and life blood of organizations. The social and technical aspects both are important in any organization. Loudon and Loudon (2014) mentioned organization as stable, formal social structure and it may not only be viewed as technical having structure, processes but people, obligations, rights and norms. The organizations serve different groups. Broadly the organizations may be taken as socio-technical. Socio-technical system considers organizational work design that recognizes interaction between technology and people in a workplace. The interrelatedness of social and technical aspects may be referred as sociotechnical and such interaction between social and technical factors may affect organizational performance.

ICT enabled organizational transformation is socio-technical phenomena (Oden, 1999). Socio technical perspective divides the organization in to social and technical systems. STS views the organization as work system with two inner related sub systems, the technical and social subsystem (Oden, 1999). The technical system is composed of processes, tasks and technologies needed to transform input into output, whereas the social system is concerned with the people their skills, knowledge, values and believes. The output of work system will be based on the joint interactions of these two sub systems (Bostrom and Heinen 1977).
Organizational transformation could be studied by considering and integrating the social as well as technical subsystems together (Oden 1999). This theory reflects that any change in one part will also reflect change in the other part of the organization. The social as well technical changes are interdependent and ignoring any one of these will result in failure and disappointing results of ICT enabled organizational transformation (Chen and Nath 2008; Nair, Reddy, and Samuel 2014).

Bostrom and Heinen (1977) discussed the main assumptions of STS i) Socio-technical approach is very close to theory Y as people are viewed within the system and actively participating through their skills and abilities in achieving organizational goals. The other important goal of STS is developing a flexible learning system to adopt and adjust in changing environment.

Organizations need to change their traditional approach towards adoption of advance ICT systems. Traditional approach focus more on technology and process change and ignore the people and organization structure change issues in the organization resulting failure and disappointing results of ICT implementation in the organization (Bostrom and Heinen 1977). Bostrom and Heinen (1977) stressed the importance of socio technical approach for successfully implementing advance ICT systems like ERP and BPR in the organization. It demands equal share of socio and technical focus while adopting these systems.

Rouse and Baba (2006) considered STM important for understanding transformation phenomena, since the work organizations are not solely technical or rational system designed to achieve managerial goals but they are social systems. Any change in work process must consider social and technical dimensions together and make provisions for joint optimization. They considered joint optimization as the only effective solution selected from different options.
Applebaum (1997) also discussed the importance of STS in the field of organizational change with respect to technology. The important feature of STS is the humanism and effectiveness must be linked together in the design of work and work systems. Klein (2014) mentioned the interdependence of technology and people and his main argument is the technology affects the behavior of people and similarly behavior of people affects working of technology.

Since ICT enabled organizational transformation consists of introducing fundamental changes related to people, process and technology aspects, it seems that STS may be suitable approach for studying and understanding organizational transformation phenomena from sociotechnical perspective. Past research also highlighted the need of research in order to gain deep understanding about people, process and technology aspects in the transformation process (Appelbaum 1997; Bostrom and Heinen 1977; Chen and Nath 2008). One of the objectives mentioned in chapter 1 of this research is understanding transformation initiative of organizations through a socio-technical perspective.

### 2.6 ICT ENABLED ORGANIZATIONAL TRANSFORMATION

This part of literature review will explain the details about the role of ICT in the organizational transformation. ICT is playing critical role in transforming organizations of the 21st century. The role of ICT for effectively and efficiently managing resources in the organization has been discussed by different authors (Venktraman, 1994; Moreton, 1995; Purchase et al., 2011). IT enabled change has different characteristics than general change practices in the organization (Geyer, 2002; Anderson, 2013). The issues and challenges of IT enabled change were different than normal change practices (Abraham & Junglas, 2011; Basole et al., 2012). The researchers and
practitioners are continuously trying to help the business community to manage such issues and provided different frameworks and guidelines.

Benjamin and Levinson (1993) provided guidelines to the managers to successfully manage the process of IT enabled transformation. They provided eight principles as guideline to manage the process of transformation. These guidelines were mostly related to developing favorable environment for transformation by motivating different stakeholders through participation, training and change management practices. Moreover, they also emphasized the need of proper strategy to align business with IT. The collaborative approach among IT and other business departments was also considered necessary for the success of such initiatives.

Venktraman (1994) presented most popular framework regarding IT enabled business transformation. He examined the IT enabled change from a business process transformation perspective and proposed a two-dimensional framework. The framework discussed the impact of evolutionary and revolutionary approaches and their benefits through five layers. The first two layers of this framework are evolutionary and required minimum changes as compare to the last three layers considered as revolutionary and require fundamental changes.

The organizations will get maximum benefits if they adopt revolutionary approach for transformation whereas; organizations will be having minimum benefits by if they are following evolutionary approach.
The explanation and details about this framework mentioned by Venktraman are compiled as under:

The organizations at level 1 will be interested to solve operational problems and required minimum intervention. The management will face minimum problems at this stage. The level 2 organizations will be interested in providing connectivity at the entire organization and some interdependence of business processes. The problems of level 2 arise due to less attention given to business processes and more attention on the technical side of the project. The organizations at level 3 faced some more problems as compare to level 2 like the issue of centralization vs decentralization and administrative mechanisms for coordination and control. The organizations at level 4 involve multiple stakeholders and faced challenge of effective deployment of IT in the organization. The issues of level 4 demand some more intervention from top management as compare to the first three levels. The organizations at level 5 faced more strategic issues as compare to the initial level. The
organizations would not be able to get maximum benefits of IT enabled transformation if they are not strategically dealing issues and problems. The authors also stressed the need of planned strategy regarding process integration and alignment of IT and at the same time should focus on commitment and motivation of stakeholders.

The other important premise developed from this framework would helped the management of organizations to understand that IT alone cannot help in attaining maximum benefits of transformation but the crucial point is the objective and approach of top management regarding such initiatives. The organizations adopted evolutionary approach by fine-tuning the existing systems and processes will be having minimum benefits as compare to the organizations having long term focus on efficiency and effectiveness and adopted revolutionary approach. King (1997) also considered evolutionary benefits related to efficiency enhancement will be simple to implement and having minimum benefits as compare to strategic benefits by adopting revolutionary approach and bold decisions by adopting revolutionary approach.

Similarly Anderson and Anderson (2001) discussed three types of organization change i) developmental change ii) Transitional change and iii) Transformational Change and elaborated all three aspects comprehensively through matrix (for details see Anderson and Anderson, 2001, Table 2.1 p.33). The points discussed by Venktraman regarding revolutionary level 5 are similar to transformation type of Anderson and Anderson and the first three levels of Venktraman are very similar to developmental change and transitional change introduced by Anderson.

Rockart et al. (1996) conducted very important research regarding the future role of role of IT in the business organizations. The authors of this research were working in senior positions of top universities like MIT and London Business School. They conducted research in more than 50 companies in exploring the role of IT in transforming organizations of the 21st century. They
collected data from the top management of these companies and finally gave recommendations
for the future organizations interested in introducing IT enabled change in the organization. Their
recommendations are compiled as:

- Focus on providing customized services and products to the customers
- Reengineering and simplification of operational, administrative and support processes
- Providing information access to all the employees and managers of all levels
- Focus on customers’ feedback and introducing information sharing and information
  management practices in the organization.
- Redefining the role of IT department by outsourcing IT services and focusing on
  technology anticipation, process innovation, supplier management and IT governance

Although the recommendations made by Rockart et al. (1996) seems simple and easy to
implement but in reality, the organizations implemented integrated ERP systems with BPR
initiatives face lot of challenges and disappointing results (Soh et al., 2003). Organizational
transformation requires a fundamental change in terms of management structures, business
process design and employee attitude. ICT may play an important role of enabler if it is aligned
with the business process efficiently and effectively. How technology (ICT) should be aligned
with the business process during the transformation efforts is an important and challenging task
that needs to be addressed (Moreton, 1995). The focus on the process that combines the design,
development and exploitations of technical systems with the organizational and business context
may lead to favorable results. The future research recommended by most of the authors stressed
the need of understanding the process of transformation by and approaches adopted by the
management regarding alignment of IT with business processes during transformation process in
public as well as private sector organizations (Kim et al., 2007, Coeurderoy, 2014). One of the
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main objectives of this research was to understand the process of transformation both in public as well as private sector organizations. The case studies were conducted to address this gap.

The ICT enabled organizational transformation is a strategic imperative and requires commitment and consistent support from the top management (McGinnis and Kessler, 2012). The organization itself and the IT professionals should understand it in depth as the organizational transformation is a complex phenomenon, integration of ICT in organizational functionality needs to be fully conceptualized to avoid transformation intricacies before its implementation (Fonstad and Robertson, 2006; Robey and Sahay, 1996). Rouse (2005) identified the important role of strategy, process, technology and people skills as critical means of transformation. The importance of people, process, structure and technology in IT enabled change in the organization is well recognized (Levit, 1964 cited in Nograšek and Vintar 2014.). The organizations are using different means to initiate ICT enabled transformation activities keeping in view their requirements and future needs. It may be argued that the consideration of people, process and technology as a “potential means” of organizational transformation may be thought out as an essential aspects. This research considered people, process and technology as potential means that may help ICT enabled transformation in the organization.

Past research identified that success of ICT enabled organizational transformations is questionable. The organizations were unable to get the intended business benefits of ICT enabled transformations (Chou et al. 2014; Vestal, 2011) There exist a need to explore different factors that may enable the transformation process to be smooth and also help in minimizing the challenges and issues. Past research reflects that lack of i) strategic planning, ii) change management, iii) information management, iv) IT governance and v) ignoring BPR are some reasons of disappointment regarding ICT enabled change (Iveroth, 2012; Hammer and
Successful ICT enabled change may be indebted to change management and knowledge management activities carried out in the transformation process (Muthusamy et al., 2005; Boersma and Kingmal, 2005). The researchers and practitioners stressed the need of IT governance in successfully implementing and sustaining transformation in the organization (Robert, 2014; Markus et al., 2000). Furthermore, the role of knowledge management, change management, business process management and IT governance also needed to be explored in detail (see Xu et al., 2006; Vestal, 2011; Vandaie, 2008; Rouse 2006; Almashari et al., 2001; Bostrom and Heinen 1977). McKieown and Philip (2003) mentioned the role of process change and information technology related initiatives as enablers of business transformation. It may be speculated that organizations need to understand the role of enablers like change management, knowledge management, BPR and IT governance in order to exploit true benefits of the potential means such as people, process and technology in successfully executing ICT enabled organizational transformation. This research attempted to explore the potential “means” and “enablers” that may contribute towards ICT enabled transformation to be smooth and challenges free.

2.6.1 Role of ERP Systems in Transformation

Organizations are implementing advance ICT systems like ERP in the organization to be competitive and moreover ERP systems are surely expensive and need a lot of resources to be implemented successfully (Coeurderoy, 2014). Past research findings reflect that organizations are investing huge amount on implementation of these systems but unable to get the intended business benefits (Chou et al. 2014). ERP systems are considered revolutionary systems in the organization and demand fundamental changes in work structure, business
processes and employee behavior and approach (Hammer 1990). Past research also identified different approach adopted by the management of different organization and resultanty achieved different results (Molla and Bhalla, 2014). The following part of literature review will discuss the details of two approaches mostly adopted by the management of organizations initiated ERP enabled transformations.

2.6.2 Transformation versus Automation

The traditional approach used in implementation of information systems in the organizations was based on the philosophy of theory X (Bostrom and Heinen 1977). The organizations were interested in getting control and work structures and systems were designed accordingly. The work structures were not designed according to the needs of the ERP systems (Soh et al., 2003). ERP systems were implemented using the existing structure of the organization. The organizations were unable to understand transformation potential of ERP systems in the organizations (Mattila et al. 2011). Organizations adopted function driven approach by applying ERP systems in one of the departments of the organization. The existing business process were automated without introducing any major change in the business process (Hammer 1990). The end to end business process were not integrated and organizations failed to achieve the benefits of integrated systems (Muthusamy et al., 2005; Sharma et al., 2011). Organizations were reluctant in making any major changes in their existing structures maybe they consider these structures suitable to meet their current needs. These ERP systems were implemented using the old philosophy of first order change. It might be just automation rather than transformation.

In early nineties ERP systems were implemented without introducing any major change in the existing business process. Later on, the organizations realized the importance of Business Process Reengineering (BPR) and ample efforts were made to adopt the best practices in the
organization such efforts were not too successful (McGinnis & Huang, 2007; Markus et al, 2000). So, organizations were reluctant to introduce any major change in their existing business process. Consequently, organizations go on demanding too much customization in the ERP solutions (i.e. SAP systems). ERP systems without BPR are considered as mere automation and organizations were unable to get the true benefits of these systems (Hammer 1990).

2.6.3 Issues and Challenges of ICT Enabled Transformation

Organizations are facing a lot of challenges while initiating the efforts of fundamental change in the organization (Rouse and Baba 2006). ICT enabled organizational transformation is a challenging task and past research reflected high failure rate of these transformations (Uhl 2014; Heeks 2002). The high failure rate of enterprise transformations is one of the challenges for the management of organizations interested for initiating transformation initiatives in the organization (Ojiako and Maguire 2008; Uhl 2014). The success rate of organizational transformations is not encouraging and it appeared as one of the challenging tasks for top management to deal with such complex matter (Rouse and Baba 2006; Marketwired 2014).

<table>
<thead>
<tr>
<th>Authors</th>
<th>Failure Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hammer and Champy (1993)</td>
<td>70%</td>
</tr>
<tr>
<td>Beer and Nohria (2000)</td>
<td>70%</td>
</tr>
<tr>
<td>Kotter (2008)</td>
<td>70%</td>
</tr>
<tr>
<td>Senturia et al (2008)</td>
<td>70%</td>
</tr>
<tr>
<td>Ojiako and Maguire 2008</td>
<td>50%</td>
</tr>
<tr>
<td>(Uhl, 2014)</td>
<td>70%</td>
</tr>
</tbody>
</table>

Table 2.2 Failure Rate of Organizational Transformation
The high failure rate as mentioned in table 2.2 is one of the serious concerns for the researchers and practitioners. The failure of transformation might be due to technical as well as some social reasons. Some of the reasons mentioned in the past research regarding failure of organizational transformation are summarized in the following table 2.3 (Kotter, 95; Almashari et al, 2001; Galliers et al. 2007; Kim et al., 2007; Irani et al., 2007; Hughes 2015):

<table>
<thead>
<tr>
<th>Factors</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformation Focus</td>
<td>Organizational transformation was considered purely from technical perspective and less importance to social/behavioral aspects</td>
</tr>
<tr>
<td>Strategy</td>
<td>Lack of Transformation Strategy</td>
</tr>
<tr>
<td>Top Management</td>
<td>Lack of involvement and support</td>
</tr>
<tr>
<td>BPR</td>
<td>Less importance given to BPR</td>
</tr>
<tr>
<td>Environment/culture</td>
<td>Lack of Supportive environment and culture</td>
</tr>
<tr>
<td>Communication</td>
<td>Lack of effective communication among stakeholders</td>
</tr>
<tr>
<td>Participation</td>
<td>Lack of Participation and involvement of stakeholders</td>
</tr>
<tr>
<td>Information Management</td>
<td>Valuable contribution of information/Knowledge management was not realized</td>
</tr>
<tr>
<td>ICT enabled Change</td>
<td>Failure to manage and sustain IT enabled change</td>
</tr>
<tr>
<td>Change Management</td>
<td>Lack of change management practices</td>
</tr>
<tr>
<td>Training and skills</td>
<td>Lack of training and skills</td>
</tr>
<tr>
<td>IT Governance</td>
<td>Lack of IT governance</td>
</tr>
</tbody>
</table>

Table 2.3 Some Failure Reasons identified from the past research
The challenges identified were not only technical but management faced lot of social, political, behavioral issues in addition to technical issues during transformation efforts (Frankland, 1994; Kamal, 2006; Coeurderoy, 2014). Past research stressed the need of exploring different social as well as technical issues of organizational transformation (Mattilla et al., 2010; Rouse, 2011; Besson and Rowe, 2012). Moreover, they also stressed the need of exploring remedial efforts of the management regarding these issues and challenges in order to develop further understanding about this complex phenomenon. Organizations are facing social as well as technical challenges during ICT enabled organizational transformation (Irani et al., 2001). Technical challenges are easy to manage than social challenges (Hammer and Champy 1993). Most of the challenges faced during the transformation process are people related (Ojiako and Maguire 2008). How organizations manage the social aspect of change during the transformation process is one of the areas that need to be explored in detail (Orlikowski and Barley 2001). The critical questions identified the importance of socio-technical approach suitable for the transformation process of an organization. This research tried to address this gap by identifying the issues and challenges related to people, process and technology and also tried to document the remedial measures of the management through case studies.

Organizational transformation cannot be successful without involvement of relevant stakeholders (employees, customers, vendors) in the transformation process (Nograšek and Vintar 2014). Too much involvement and participation sometime may disturb the process of transformation (Pan et al, 2007; Markus et al, 2000). How to involve the relevant stakeholders during the transformation process is an important question that need to be addressed (Ojiako and Maguire 2008). Orlikowski and Barley (2001) also stressed the need for exploring social aspects of transformation rigorously for its deep understanding. How organizations manage the social
aspects of change during transformation process is a question of interest? It invites attention of the researchers to understand the complexities and its challenges.

Past research also highlighted issues related to training and development of employees and customers. The authors stressed the need of allocating proper budget and developing proper strategy about this issue (Pan et al., 2007; Iveroth, 2011; Besson and Rowe, 2012). The organizations successfully implemented IT also focused on developing strategy for training and development and also allocated sufficient funds (Pishdad and Haider, 2012; Piccinini et al., 2015).

The organizations prefer to outsource their IT services. It has also created lot of challenges for the top management. The employees consider such initiatives threat to their job and feel insecure and show lot of resistance during change initiatives (Yamakawa et al., 2012). Lacity et al. (2009) conducted literature review on outsourcing of IT services and identified issues related to insecurity of existing IT teams and lack of service management culture in the organizations. Lacity et al., (2009) also stressed the need of understanding issues and challenges of outsourcing of IT services in detail along with remedial strategies of the management.

Past research identified the importance of information management and information sharing in IT enabled transformation process (Parry and Graves, 2008; Pearlson and Saunders, 2013). lack of availability and access of relevant information is one of the critical issues faced by most of the organizations involved in the process of IT enabled change in the organization (Davenport, 1994, Ash and Burn, 2003). Vandaie (2008) identified the importance of sharing tacit as well as explicit knowledge during major change project like implementation of ERP in the organization. The importance of information sharing culture in the transformation process highlighted by most
of the researchers and developing information and knowledge sharing culture is considered one of the important challenge for the top management (Fiedler, 2010; Alavi and Leidner 2001). The important role of information sharing and information management has been advocated by Balint et al. (2016). Past research also highlighted the need of exploring knowledge sharing and knowledge management practices during process of transformation (Robey et al., 2002; Besson and Rowe, 2012).

The coordination and communication among different stakeholders is considered one of the important issues faced in most of the organizations and ignoring this factor recognized as major reason for the failure of transformation initiatives (Heeks, 2002; Hughes, 2015). The stakeholders involve in the process of transformation are internal as well as external. The management has to develop effective communication and coordination plan to facilitate and streamline the process of transformation (Al-khoury, 2010). Past research also stressed the need of exploring efforts of management regarding effective communication and coordination activities in the process of transformation (Reichers et al, 1997; Mueller et al., 2008; Hughes, 2015).

People and technology are the key factors of ICT enabled organizational transformation and neither alone will work effectively and efficiently (Ojiako and Maguire 2008). Organizations will not be successful in their transformation efforts if they ignore any one of these factors. Organizations need to understand that if they are applying technology without social redesign is merely their automation effort and similarly if they are applying social change without technology reengineering is merely their reorganization effort not transformation efforts (Soh et al. 2003). The organizations need to maintain a balance approach towards people and technology related factors as the failure of BPR activities in the organization is due to ignoring behavioral
factors while the failure of TQM is due to ignoring the technical factors in the organization (Oden 1999). The organizations cannot ignore the importance of socio-technical factors in the transformation process and to make transformation efforts successful it is important to consider these efforts from socio-technical perspective. There is a need of research to understand the ICT enabled transformation efforts from socio-technical perspectives (Rouse 2006; Bostrom and Heinen 1977). One of the objectives mentioned in chapter 1 of this research reflects the importance given to this aspect.

2.7 SUMMARY

This chapter briefly explained the concept of transformation and its relevant aspects and why is it needed in the organization for their survival in future. The critical review of past research findings helped what had already been done and to understand the issues, challenges and the complexity of organizational transformation process. It further helped to identify different relevant aspects such as people, process, technology and managing transformation process those are still needed to be explored and explained in its true spirit. The issues and challenges of ICT enabled organizational transformation in different perspectives and relevant theories have also been reviewed. The literature review led to the perception that different studies addressed the organizational transformation phenomena either in social or technical perspective. Moreover, the researchers also stressed that ICT enabled organizational transformation should be addressed keeping in view the socio-technical perspective. The review reflects that nature of ICT enabled organizational transformation need to be understood in depth from different perspectives which are not fully addressed in past research findings specifically in the context of developing countries. The literature review led to the research gap already mentioned in chapter 1. A
systematic investigation may be adopted in terms of research design and method that will be explained in the forthcoming chapter. It describes how research study is formulated to proceed with further research.
CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

This chapter describes and justifies the research approach, research design and research method adopted to address research questions in chapter 1. The chapter 2 presented rigorous literature review reflecting research gap that needs to be addressed in order to enhance our understanding about the phenomena under research. Keeping in view the research questions this chapter explains the research design proposed and suitable research methodology adopted to proceed with this research work. This chapter provides support to build our argument regarding adoption of research method suitable for this research study to address the research question and objectives stated in its true spirit.

The research conducted is exploratory in its nature to gain in depth understanding about the organizational transformation phenomena and exploring the issues and challenges faced by the top management. The remedial measures taken during the process of transformation have also been analyzed. Multiple case studies were carried out keeping in view the research context to address the research questions. In depth interviews, documentation and observation were taken as source of evidence to collect the data for further analysis. It is hoped that the method adopted may lead to better understanding of complex phenomena of transformation and complexity of challenges faced.

3.2 RESEARCH APPROACH

According to Kayrooz and Trevitt (2006, P.4) “Research is a process of systematically collecting and analyzing valid and reliable information in a given context”. The general purpose of research is to increase knowledge within the discipline and moreover increasing knowledge within oneself.
as a professional. It encompasses exploration, description, and explanation in most of the cases for further understanding the phenomena concerned. The commonly used approaches in research are termed as qualitative and quantitative.

In social science research, qualitative research methods were developed and adopted to enable researchers to study social and cultural phenomena in more depth and rigorous way. Both research methods are being used in information system research, however the choice of adopting any one of them may depend upon the nature of the study and the relevant questions raised (Bryman, 2012; Kayrooz and Trevitt, 2006). Choosing appropriate approach consists of decisions regarding selection of method, process and tools used for gathering information and finally analysis and interpretation of information. The following table-3.1 reflects the fundamental difference in qualitative and quantitative approaches (see Cooper and Schindlar, 2006; Kayrooz and Trevitt, 2006; Bryman, 2012).

<table>
<thead>
<tr>
<th>Qualitative Approach</th>
<th>Quantitative Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inductive (Understanding, generation of theory from data)</td>
<td>Deductive (Testing theory-causal explanations, testing hypothesis)</td>
</tr>
<tr>
<td>Text based/ Non-mathematical analysis</td>
<td>Numbers/Statistical and mathematical analysis</td>
</tr>
<tr>
<td>Understand complex phenomena and mostly dealing questions who, what, when, why and how</td>
<td>Cause and effect relationship, questions how many, how much and what relationship exists between different variables(IV,DV)</td>
</tr>
</tbody>
</table>

Table:3.1 Fundamental difference in qualitative and quantitative approaches
The following part of this chapter explains qualitative approach in detail and further justifies the reasons for adopting it for this research. Creswell (1998, p.15) defined qualitative research as “an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem. The researcher builds a complex, holistic picture, analyzes words, reports detailed views of informants, and conducts the study in a natural setting”. Qualitative research is interpretive and interpretation may vary depending upon method of analysis. Cassell and Symon (2004) mentioned different features of qualitative research such as "a focus on interpretation rather than quantification; an emphasis on subjectivity rather than objectivity; flexibility in the process of conducting research; an orientation towards process rather than outcome; a concern with context— regarding behavior and situation as inextricably linked in forming experience; and finally, an explicit recognition of the impact of the research process on the research situation". Creswell (1998) mentioned five common methods Biography, Phenomenology, Grounded theory, Ethnography and Case study for qualitative research.

Binbasat (1987) advocated to adopt case study as a qualitative research method to study information systems in the organizations. He argued that researcher have the option to study information system in natural setting and to further generate theories from practice. Secondly the qualitative methods may allow the researcher to answer “how” and “why” questions in order to understand nature and complexity of the processes. Past research preferred to adopt qualitative approach to explore and understand the social reality of individual, groups and organizations and further considered it suitable for exploring and understanding change related initiatives in the organization (Cavaye, 1996; Cassell and Symon, 2004). Gillham (2000) considered the important
role of context in determining human behavior, thoughts and feelings. Every organization has some different characteristics in terms of culture, environment, and operations. The transformation approach adopted in one organization may not be suitable in other organization. In order to understand change related phenomena in some organization one has to consider context before proceeding research in detail.

Case studies also offer the benefit of studying phenomena in detail and in context, particularly in situations where there are many more variables of interest than there are observations. Yin (2009) considered case studies suitable for studying context specific phenomena and situations where there are many variables of interest. Binbasat et al, (1987, p.370) stated difference between case studies and other alternate methods available for conducting your research “ A fundamental difference between case studies and these alternative methods [such as lab/ field experiments] is that the case study researcher may have less a prior knowledge of what the variables of interest will be and how they will be measured”.

Keeping in view the objectives and research question, qualitative approach has been adopted for this research. The research questions and research objectives stated in Chapter No 1 clearly reflect the rationale, need and suitability of qualitative approach for this research. The main objective of this research was to understand the phenomena of ICT enabled organizational transformation from socio-technical perspective, so a qualitative approach seems to be more appropriate to gather information about transformation process from top management and others involved during the process of transformation.
3.3 RESEARCH DESIGN

The research design includes plan:

- based on research question, objectives and context
- for methodology, methods and tools
- for data collection and analysis of data and
- Particular sequence of activities performed in the research

(see Cooper and Schindler, 2006; Kayrooz and Trevitt, 2006; Oleary, 2004).

The research design is delineated in Fig.1. It clearly reflects the sequence of activities to be performed in this research. The rigorous literature review (discussed in chapter 2) helped a lot in understanding organizational transformation phenomena already explained in the past research studies, identifying research gap/limitations within the relevant existing research and finally developing objectives and research questions to be addressed. Based on research questions stated the decision about research approach and method to be adopted was made carefully. Our research design comprises of four mini case studies to be conducted to address the matter (see Fig.1). The case studies were carried out in public and private sector organizations. The case studies are used in an exploratory manner for clarification of context and nature of phenomena (see Benbasat et al., 1987). Each case study is conducted and analyzed separately. Multiple case studies also reflect the robustness of this research as advocated by Yin (2003). Finally an integrated analysis of four case studies helped in understanding complex phenomena of ICT enabled organizational transformation.
The research design process of this research is shown in the following diagram.

**Fig. 3.1  Research Design Process**

[Diagram showing the research design process]

- Literature Search Transformation
- Literature Search Org Transformation approaches
- Understanding Transformation Phenomenon
- Rigorous Literature Review
- Research Gap Identification
- Formulation of Research questions/objectives
- Selection of Research Method
- Case Selection
- Conducting Case Studies & Analysis
  - Case study-1
  - Case study-2
  - Case study-3
  - Case study-4
- Integrated analysis & findings
3.4 CASE STUDY: A RESEARCH METHOD

The research objectives and research questions stated in chapter no 1 clearly reflect the need and rationale for qualitative case study for this research. The case study research is inductive rather than deductive. The inductive reasoning refers that researcher may attempt to generate evidence that would lead to building theory. Whereas deductive reasoning should begin with hypothesis those are subjected to empirical testing (Sahay et al., 1994). The inductive case study approach has been adopted as research method for this study in the light of research question and research context. The reason for the adoption of this approach is based on the following aspects reflected in the past research (Yin, 2009; Merriam, 2009; Creswell, 1998; Yin 1994; Binbasat, 1987):

- Research questions start with “How” or “What”
- Need detailed understanding and insights of the complex, contemporary phenomena
- Nature of the research topic and goals of the researcher
- Topic needs to be explored and theories need to be developed not tested
- To study individuals, groups and organization in their natural setting
- Need context specific research

The case study research has become the most widely used qualitative research method in Information System research (Orlikowski and Baroudi 1991). This method is considered to be more suitable when a holistic, in depth investigation is required (Tellis 1997, Merriam, 2009). Case studies examine phenomena in its natural settings and generate theories from practice. With the rapid pace of change in Information system field new topics emerge for which valuable
insights may be gained by using case research. The case study examines the phenomena in natural setting and data may be collected with multiple methods from people, groups or organizations (Benbasat et al., 1987).

The case study research method provides an opportunity for the researcher to examine in depth a single entity or a particular event in its context (Franz and Robey1984). Various researchers mentioned the case study research method as an effective tool that may improve conceptual and descriptive understanding of the complex phenomena to be investigated (Yin 2009). Since the objective of this research was to understand the complex phenomena of ICT enabled organizational transformation from a socio-technical perspective - the exploratory approach seems to be appropriate for this research. The exploratory approach is adopted when a new area is investigated and little is known about the contemporary phenomena (Benbasat, 1987). ICT enabled organizational transformation is a new phenomenon and to explore issues and challenges of ICT enabled organizational transformation from the management involved in the process of transformation may be considered as rationale of exploratory nature of this research. The understanding about the process of ICT enabled transformation as it happens and approach adopted by the management to introduce major change in people, process and technology were the major matters to be developed through this research.

The main research question of this research is “how organizations are being transformed through ICT”. This research question requires in depth understanding of the process and relevant aspects in a rigorous way to reach some conclusions that ultimately may fulfill the research objectives. The objectives developed include exploring the phenomena and to further dig out socio-technical issues and challenges faced by the organization and their remedial measures
adopted to cope with the situation arises. The research questions and research objectives mentioned in chapter no 1 clearly reflects the need and rationale for exploratory case study to understand the organizational transformation process along with its means and further enablers in its true spirit.

3.4.1 Unit of Analysis

The unit of analysis is the major entity that is being analyzed and it is based on research question (Yin, 2009; Binbasat, 1987). Yin (2003, p. 25) stated “the main unit of analysis is likely to be at the level being addressed by the main study questions”. Depending upon the focus of the study one may consider individuals, groups or an entire organization as unit of analysis. It reflects that the unit of analysis could be individual, group or organization. Miles and Huberman (1994, p.25) defined a case as a phenomena of some sort occurring in a bounded context. The case is, “in effect your unit of analysis”. Yin (p.29-30) stated that “ …. case studies have been done about decisions, programs, the implementation process and organizational change”. He further stated “as general guide your tentative definition of the unit of analysis (which is the same as the definition of “case”) is related to the way you have defined your initial research questions.” Baxter and Jack (2008) recommended that the following questions may help the researcher to determine a case.

i) Does he want to analyze the individuals?

ii) Does he want to analyze a program?

iii) Does he want to analyze the process?

iv) Does he want to analyze the difference between organizations?
In the light of answers to the questions mentioned above along with research questions raised in chapter 1, this study considered organizational transformation process as unit of analysis.

### 3.4.2 Selection of organization

The organizations were selected keeping in view the following criteria:

a) Organizations those have already implemented advance ICT systems like ERP

b) Organizations exposed to major organizational changes (BPR.)

c) Organizations having such characteristics and willing to cooperate regarding provision of access to data

Moreover, I attended three days’ workshop on organizational transformation and development arranged by the Management Services Wing Establishment Division of Pakistan. The key speakers (from the public/private sector) presented case studies and share their experience regarding efforts they have made to transform their organizations at present.

After sharing my area of research interest with them and showed my intent to do case studies in their organizations if they allow. They kindly agreed to help me in this regard so four organizations (public as well as private sector organizations) were selected those met the criteria already mentioned. Then the management of the university formally requested to the top management of these organizations companies to provide the opportunity to me to start my research work. The sample of the letter is attached as appendix A.

The organizations selected for the case studies were not from the same industry but different public and private sector organizations. The objective of the study was to explore and understand the process and approach adopted for ICT enabled organizational transformation so selection of
organizations working in different sectors was based on the business management perspective mentioned by Nelson (1991). Nelson mentioned that for economist perspective it is more preferable to focus on a particular industry. In contrast if management perspective is the major then the focus may be different organizations running different business. The focus of this research was on understanding transformation efforts of individual organizations rather focusing on particular industry therefore the rationale for selecting different organizations is very close to the business management perspective. Among the organizations selected for the case some were reluctant showing their identity so in order to maintain confidentiality these are identified as Organization A, Organization B, Organization C and Organization D in this thesis.

### 3.4.3 Sampling Technique

There are various sampling techniques being used in qualitative and quantitative research. Marshal (1996) stated that sampling in qualitative studies is different from sampling techniques than quantitative studies. According to him probability sampling is not an appropriate choice for qualitative studies rather there is a need of flexible and pragmatic approach depending on the research question and context of the study. Creswell (1998, p.119) mentioned 16 strategies for purposeful sampling adopted from Miles and Huberman(1994) and recommended to adopt “maximum variation” in case study research by collecting multiple perspective about cases. The researcher can adopt any of these approaches depending on the context, research objectives and research question. This research adopted purposive sampling technique i.e. data collected from most relevant persons who were involved in the process of transformation. The objective of this research was not generalizability rather focus on understanding the phenomena of transformation in the organization.
The interviews of the top management involve in the process of ICT enabled organizational transformation were conducted. Sometime interviewees also recommended useful and potential candidates for further understanding phenomena of transformation and efforts were made to conduct formal and informal interview of such persons. Such type of sampling is considered snow ball sampling (as one of the strategy of purposive sampling) mentioned in the past research (Marshal, 1996; Creswell 1998. In addition to formal interviews of the top and middle management, informal discussions with team members also helped a lot to understand the matter in depth.

3.4.4 Single or Multiple Cases

This research adopted multiple case study approach of type 3 as mentioned by Yin (2003). The objective of this research was to propose framework for organizational transformation depending on the findings and analysis. Eisenhardt (1989) stated that multiple case studies approach suitable for theory building. According to Yin (2003) multiple case studies will help the researcher to have more confidence in the findings. It helped further to enhance the accuracy, reliability and validity of the results by capturing the holistic essence of the subject (Miles & Huberman, 1994). Multiple case studies have more variation and helped to enhance the external validity or generalizability of the study and produced more convincing interpretation of some phenomena (Merriam, 2009). The adoption of multiple case study approach helped in proposing some framework for ICT enabled organizational transformation.
3.4.5 Conducting Case study

Case study protocol was prepared according to the guidelines of well-known authors (Yin, 2003; Bryman, 2012, Binbasat, 1987) and is based on the following points.

1. The statement for the overall aim/objectives of research
2. The procedure adopted to gain access to the organization
3. Data collection plan (case wise)
4. Interview guide prepared (broad questions to be covered, mostly open ended, semi-structured)
5. Transcription of interviews and presentation of results
6. Data analysis and creating case study report

Case studies may be conducted in parallel or sequential. As mentioned in the diagram of research process (figure 3.1), four exploratory case studies were conducted in sequence. Vaus (2001) considered sequential approach suitable for inductive studies, since this research is based on inductive approach therefore to carry out case studies in sequence was preferred.

3.4.6 Data Collection

In order to address research questions, primary source of data collection were semi structured interviews of the top management/operational management involved in the process of organizational transformation. The documentation available was also accessed and analyzed. The interviews were tape recorded and transcribed. Multiple sources of evidence were used by collecting data from multiple sources about the same phenomena of transformation and it further ensured data triangulation as discussed by Yin (2003, p.100). It was further ensured that findings or results of individual case studies should be supported by more than single source of evidence.
The multiple sources of evidence also helped to make results more accurate and convincing. The convergence approach adopted for this case study as mentioned by Yin (2003, p.100) helped to address the issue of construct validity by considering multiple sources of evidence like semi structured interviews, informal discussions, documents, and observation to understand the phenomena of organizational transformation.

3.4.7 Interview Questions /Interview Guide

Interview questions had broadly cover the following areas:

I. Reasons for transformation
II. Approach used for ICT enabled transformation
III. Strategy for initiating and introducing transformation process in the organization
IV. Strategy for the management of transformation process
V. Socio-technical issues and challenges during transformation process
VI. Remedial measures and strategies to address the socio-technical issues and challenges

The collection of data without preparation may cause problems. The four case studies were conducted keeping in view the principles and guidelines provided by different authors to conduct case study research (see Yin, 2009; Benbasat et al. 1987; Merriam, 2009; Baxter & Jack, 2008). The list of interview questions is attached as appendix B. As part of case study protocol, the research objectives along with interview questions were sent to the participants prior to the conduct of interviews. The interviews were semi structured and efforts were made to follow a formal plan for the data collection. One of the challenging tasks during this important phase of data collection was to make interviewees focused on the main subject. The focus of the
interviewees brought back to the main questions tactfully. The answers to the questions were discussed and confirmed during the interviews. In this research field notes were also used to capture verbal and nonverbal information. The important data were also collected in the form of industry publications, presentations, memos and email messages etc.

3.4.8 Data Analysis

According to Yin (2003) the case study analysis is one of the least developed and not well explained areas like quantitative statistical analysis. It is a difficult and challenging task for the novice researcher. For this research the guidelines and advice of well-known authors (see Miles and Huberman, 1994; Eisenhardt, 1989; Gillham, 2000; Elo et al., 2014) regarding preparing, conducting and transcribing interviews and analyzing them using various techniques like content analysis was followed for in depth data analysis. Qualitative content analysis is one of the trustworthy qualitative methods used to interpret, describe and analyze the phenomena and give meaning to the data collected (Elo et al., 2014). The process of generating codes, categories and themes as mentioned by Saldana (2009) and six step process of data analysis were followed for data analysis. In addition to this the six step process of qualitative analysis as advised by Cresswell (2009) is also consulted for this purpose. The Fig. 3.2 reflects this qualitative analysis process.
Each case study was analyzed separately and finally an integrated analysis was carried out that consequently led to a proposed framework for ICT enabled organizational transformation as described in chapter 5.

Fig. 3.2 Qualitative data analysis adopted from Creswell (2009, p.185)
3.4.9 Quality of Research Design

Yin (2003) mentioned four parameters to judge the quality of research design. Following are some of the details about these constructs on the basis of recommendations of different authors (Vaus, 2001; Yin, 2003; Creswell, 1998; Yin, 2009).

3.4.9.1 Construct Validity

According to Yin (2003) the main focus of construct validity is to avoid researcher’s subjective judgements. The construct validity was ensured at the data collection phase by using multiple sources of evidence. In addition to formal interviews of the top management, the necessary documentation was also accessed and analyzed. To ensure construct validity further, the transcribed interviews were reviewed and validated by the interviewees. Final case study reports were reviewed by some of the key respondents of the respective organization.

3.4.9.2 Internal Validity

Internal validity is used for causal and explanatory studies. This was not applicable to this research because the nature of this research was exploratory. This research study did not test any theory or hypothesis; rather adopted inductive approach by proposing framework of ICT enabled organizational transformation.

3.4.9.3 External Validity

The main purpose of external validity is to establish the domain to which the research findings can be generalized. Although the main objective of case study research is not generalizability but
case study research may be generalized in the same context or in the same environment and same situation (Yin.2009). This research ensured external validity by using multiple case studies approach and multiple observations were made before making any prediction. The replication logic was used instead of sampling logic.

3.4.9.4 Reliability

The objective of reliability is to minimize the errors and biases in a study. It will further ensure the same results if some other researcher is interested in doing the same study all over again. The later researcher should arrive at the same findings. This could be possible only if the researcher has maintained the proper documentation of the procedure followed during the research. This research ensured reliability by creating a database of case study notes, interview questions, responses etc. and it may help the other researcher in the future.

3.5 SUMMARY

This chapter has discussed in detail the research design and methodology adopted for this research. Keeping in view the research questions mentioned in chapter 1 the suitable method adopted for this research is the case study. The justification of the method along with the protocols is discussed in this chapter. This chapter helped to build the argument for the conducting multiple case studies. It also explained the suitable sampling method along with data collection techniques. The approach adopted for data analysis has also been discussed in this chapter. In order to strengthen the validity of the facts gathered the triangulation approach has also been discussed here. The next chapter will provide details about the four case studies conducted in compliance to the research design described in this chapter.
CHAPTER 4: CASE STUDIES

4.1 INTRODUCTION

This chapter provides detailed four case studies carried out in government, semi government and private sector organizations those were or being transformed. Furthermore, functioning of organization, need for transformation, approach used, the process of transformation along with the technology adopted, issues and challenges faced by the management, remedial measures and finally outcomes are elaborated separately under title “Case study A”, “Case Study B”, “Case Study C” and “Case Study D” respectively in this chapter. Each study explains the whole process including the comments of top management interviewee for developing further understanding about the phenomena. Findings of each case are highlighted and summarized in the next coming chapter 5.
4.2 TRANSFORMATION JOURNEY OF MULTINATIONAL COMPANY:  
(Case Study A)

4.2.1 Introduction

The organization selected for this case is one of the multinational companies in Pakistan. This company was established in 1902. Now it is operating in more than 100 countries. It has approximately 50000 employees all over the world. This company purchased other units (i.e. Small Companies) working independently and after acquisition it prefers to introduce their prevailing best practices in these units. The management of this company was facing different challenges related to cost reduction, inefficiency in processes, lack of globalized view and availability of timely information at the global level for effective decision making. The ICT infrastructure of this company was not providing desired IT services for the effective management of this company. The management desired to reduce the operational cost and make this company globalized since they were operating in more than one hundred countries. In order to compete in the global world effectively and efficiently the management took the challenge of transforming this company into a global company with standardized processes, business practices and state of the art standardized ICT infrastructure. The company name A is anonymous because the management did not prefer to disclose its name. This organization initiated major transformation in 2011. In the proceeding paragraphs the word “company” and “organization” are used interchangeably.

4.2.2 Need of Transformation

The operational cost of this company was too high as compared to its competitor. Consequently, it caused financial loss leading to declining in share price of the company. Moreover,
inconsistent work processes those were being practiced usually cause lot of delay in reporting and integration of information for centralized decision making. The management was unable to get the desired globalized view of the company’s outcome to formulate strategy to meet the future challenges. One of the senior managers said:

*Our top management was having pressure of cost reduction. We know our operational cost was high as compare to our competitor. Moreover, we were also in the process of acquisition of companies from different parts of the world. To maintain cost and standardize processes at the global level was a serious challenge for us.*

Similarly, another manager pointed out the reasons for transformation and said:

*Lack of standardized processes and inconsistency in work processes was one of the reasons for cost overrun; we have no other option than standardizing processes at the global level.*

The management of such a huge infrastructure and providing 24/7 support to more than 50 thousand users in more than one hundred countries was also a serious challenge for the management. Secondly, the IT infrastructure of this company was unable to provide support required at the global level due to its limited scope. One of the senior managers of IT shared his thoughts and said:

*Our existing IT infrastructure was not providing globalized view to our management. It was really a challenging and difficult task to ensure standardized IT service in more than 100 countries of the world. Moreover, we were acquiring companies from developing countries and required IT manpower was also not available in some areas.*
The top management also decided to analyze the progress and performance of the company and engaged professional consultants of the third party. The professional consultants from Mckinsey conducted survey of this company and submitted report to the top management. The different points of this report were revealed during interviews and informal and informal discussions with the managers and senior executives. The following points were identified:

- Lack of standardized Processes in the different regions
- Lack of integration in the processes
- Lack of standardized ICT services
- Lack of availability of IT staff in remote areas of some countries
- The information available at the global level not sufficient for effective decision making

The top management discussed these issues and problems with different stakeholders and got their opinion. Furthermore, the management also got opinion of consultants and experts from outside the company. Consequently, it was decided that the company requires major change to be more effective. It should adopt ERP systems to carry out various functions of the organization at the global level. The business processes need reengineering to be more efficient and cost effective. As the infrastructure of IT department and further its services are concerned, it may be cost effective to outsource it to third party of good repute.

4.2.3 Formulating Transformation Strategy

The transformation strategy of the top management was explored through some interviews and informal discussions with the senior management and managers of the company involve in the process of transformation. One of the managers discussed the broad approach of top management regarding transformation initiative and said:
We were planning for the next 10 year that is why we took the challenge of transformation. In early part of transformation our focus was more on the future business needs....We standardized processes and ensured IT to serve the current and future business needs of the company

The top management adopted futuristic approach in formulating the transformation strategy. They chalked out future business requirements of the company. One of the managers further explained:

*The top management set their priority to address future business processes and attempted IT infrastructure to be aligned with the business processes to meet the future business needs effectively.*

One of the managers shared his opinion about transformation strategy and said:

*Our overall transformation strategy revolves around business process standardization at global level, Outsourcing of IT services and participation and support of main stakeholders. It also provides guidance and governance of transformation process.*

Similarly, the main focus of transformation strategy was discussed by one of the senior managers involved in the process of transformation at the global level said:

*People, process and technology were important wheels [3 wheels vehicle] we ensured their alignment for smooth transformation journey*

The overall transformation strategy covers three broad areas process, people and technology and other enabling elements in the transformation process. The study reveals that top management has given due importance to the following socio-technical aspects in formulating the transformation strategy:
a. Encouraging participation of business process owners (i.e. HR, IT personnel etc.) and other stakeholders in transformational process

b. Adopting the strategic ways for reengineering of business processes to be more efficient and effective

c. Outsourcing of IT services and further changing the roles of IT personnel

d. Imperatives of change management

e. Promoting knowledge sharing practices among the employees

f. IT governance

How such elements led to transformation are discussed in the rest part of this case study.

4.2.4 Transformation Process: The GIP initiative

The top management introduced Global Integration Program (GIP) to achieve centralization and standardization at global level.

Fig.4.1. GIP initiative
Three programs were launched under GIP initiative. Program-I was related to business process standardization concerning marketing, sales, finance, HR and supply chain. Program-II dealt with outsourcing of Information Technology related tasks and services in the organization. The top management also took initiative of launching an Information and Change management program (P-III) to manage and sustain transformation activities carried out during P-I and P-II programs and their outcome. The three programs are presented here in more detail for deep understanding of the process of transformation and challenges faced by the organization.

4.2.5 Program-I (P-I): Process Standardization
The existing business processes were intelligently analyzed keeping in view their complexities and time delay if any caused by each that were hindering smooth functioning of the organization. It was realized that these business processes need to be reengineered, so program P-I addressed the issue by simplifying and standardizing business processes related to marketing, finance, HR, sales and supply chain processes in the organization. The process standardization practice was introduced by the top management through a team called “Dream Team”. The members of dream team were selected based on their previous experience, expertise and knowledge about processes and most importantly their knowledge sharing attitude. One of the managers was of the view:

*We selected members of dream team on the basis of their knowledge and skills and most importantly their knowledge sharing attitude.*

Similar comments of another manager were:

*We want supportive team members in the early part of transformation. We made lot of efforts in selection of these subject matter experts.*
The efforts were made in understanding the current processes at region level. For this purpose, the members of the dream teams discussed their prevailing practices and process in detail. One of the members of dream team said:

We spend a whole month in identifying the gap and issues in one of our core process [process name], then we finalized on the basis of best practices and keeping in view our future business needs of the company

He further explained the details of the approach they adopted in finalizing process at the global level:

Every one of us has drawn process on the board, we were having a detail discussion, we discussed different issues and finally we decided level 1 to level 4 processes

Once the process was standardized by the business experts then important sessions were made with IT and SAP professionals. The proposed process was discussed in detail and different technical and operational issues were discussed and identified. The business team was having a close liaison with the IT team. The process was standardized once the IT/SAP team and business professional were on the same page. Similarly, all the processes were finalized by the respective dream teams.

The involvement of IT and HR professionals in the course of process standardization was an important strategy developed by the top management. They defined the future standard template for different processes by keeping in view the technical and human resource requirements. One of the managers said:
I think involvement of HR and IT professional at the important phase of process standardization helped in proactively managing people and technology related issues

The dream team adopted collaborative approach by discussing proposed change in processes with IT and HR professionals and moreover they identified the technical and human resource requirements for the future processes. The competence and skills required to manage such changes in processes by changing existing structure and roles of individuals in addition to their training needs. The potential change in organizational structure to implement it successfully and sustain the transformation process was also apprehended at this stage.

The following diagram clearly reflects understanding we made regarding process standardization approach adopted by the management.

Fig.4.2. Dream team functioning and collaborative efforts
The efforts of the dream team regarding process standardization are summarized as under:

- Efforts made in learned existing processes
- Identified best practices
- Chalked out difference in work processes in different regions
- Proposed standardized process at region level and globally, moreover, these processes were shared with IT experts and HR professionals to identify and meet the technological and human resource requirements for their applicability
- Recommended change in the current structure and roles of individuals were identified.
- Finally, the process governance structure defined and approved.

4.2.6 Program II (P-II): Outsourcing IT services

The management realized that existing IT infrastructure and services cannot provide essential support to meet the objectives of transformation of organization. The top management ensured that initiative of organizational transformation would not be considered just an IT project encompassing implementation of ERP systems. It was a big initiative that may deal with introducing fundamental changes required in this organization to compete globally. One of the senior managers said:

_We considered IT as an enabler for [smooth functioning of] our business. The business process is on the driving seat and IT will ensure to serve the future business needs of our company._

One of the IT managers shared his thoughts and said:
The process standardization at the global level demand significant change in IT strategy.

We want centralization at the global level and for this purpose we need major change in our IT infrastructure and application as well.

The management preferred to outsource IT related infrastructure development and services. In order to implement this decision a program called P-II was initiated. The purpose of P-II was to initiate and manage the process of outsourcing of IT after negotiating with global vendors interested in providing needed IT support and services. It was very difficult to manage such a huge infrastructure through existing manpower and IT facilities available. The top management decided to outsource IT related services to reputable vendors. The comments of IT manager reflect the main focus of program P-II:

*One of the significant initiatives of our GIP [transformation initiative] is outsourcing of IT services through global vendors. We want 24/7 service throughout the world. We achieved our objective by selecting best of the available vendors in the world*

The management selected five vendors of best repute. The overall IT infrastructure was deployed and got it managed through these vendors at global level. Furthermore, the vendors were also responsible for the provision of hardware and software application and services including implementation of ERP systems in the organization. The following were five vendors were selected and assigned respective tasks:

- British Telecom responsible ICT infrastructure development
- IBM for SAP Server
- VIPRO for Functional support of SAP
These vendors have successfully implemented their relevant tasks and worked in collaboration with the existing team of IT of this company. The decision to outsource IT related management and services changed the roles and responsibilities of existing IT personal in the organization. The IT department is now responsible to ensure provision of IT services through global vendors and their role is completely changed. One of the Service managers shared his thoughts and said:

Since we have outsourced IT services, now we are not worried about the installation, server management and maintenance etc. My role is changed from network administrator to service manager.

4.2.7 IT Governance

The global IT team with the help of ICM (Information and change management) team developed IT governance mechanism for this company to be implemented at the global level. One of the senior managers shared his thoughts and said:

Since we were dependent on global vendors regarding provision of different IT services and management our global IT team developed effective IT governance strategy for this purpose

Similarly, one of the senior managers, who was actively involved in the process of transformation and retired few days back was kind enough and shared his thoughts and experience about transformation. Regarding IT governance he communicated:
We were able to manage proactively some social and critical issues related to ICT due to IT governance efforts of our global team.....issues and challenges related to the vendors were managed effectively.

One of the managers discussed the role of ICT governance and said:

Our global ICT team has decided to adopt standardized ICT tools and applications throughout the world. We cannot install any application software other than decided by the global team.

Similarly, another manager said:

I think the use of standardized applications and tools throughout the company has minimized the compatibility and other similar issues we were facing...

The global IT team further directed the regional IT teams about major tasks to be carried out at the regional level as planned. The regional teams were responsible for implementation of tasks assigned through vendors to whom IT services were outsourced. One of the IT executive said:

Our Global IT team developed governance strategy to provide standardized guidelines and policy at the global level regarding use of IT, information management etc.

The main features of the ICT governance identified through interviews and relevant documentation. The following are worth highlighting:

- Adoption of Standardized ICT Resources (Smart phone, tablets, laptop, desktop, servers etc.)
- Use of Standardized ICT applications (office/OS/email/ERP systems etc.)
• Information Management and security (Access/retrieve/save/update etc.)

• ITIL framework - Vendor selection and management

The policy regarding ICT governance was well defined to manage and sustain IT infrastructure and services in the organization at the global level. The major concern was to monitor and evaluate ICT related activities in the organization. One of the managers was of the view:

_We have to ensure to get 24/7 service without any interruption and delay. Our ICM team effectively planned IT governance for this purpose._

The management preferred to adopt Information Technology Infrastructure Library (ITIL) framework as a guideline in developing IT governance plan for this organization. They used some of the features of ITIL to ensure selection, acquisition and management of services from vendors. The global IT team made agreement with each vendor. Moreover, the services required were clearly chalked out and vendors were asked to ensure 24/7 services.

A significant change appeared in IT personals’ approach in managing and executing different IT related tasks in the organization. Previously they were involved in troubleshooting activities in most of the time whereas now they were spending their time in analyzing problems and putting their efforts to eliminate the reoccurrence of such problems in future. They practiced documenting the lessons learned and use them in future for similar issues to be rectified. The point of view of IT manager was:

_The GIP initiative of our company has not only changed the key business process and technology but also changed our approach from reactive to proactive._
4.2.8 Program III (P-III): Management of Transformation Process

The top management initiated transformation management program P-III and developed a team called Information and Change Management (ICM). The team comprises members having expertise in promoting knowledge sharing culture and managing the change that was expected to occur due to organizational transformation.

The guidelines provided by the top management to ICM team were shared by one of the managers, he said:

*People are important part of our organization. Our new MD few years back shared some important information in the board of directors meeting. He narrated words of one the famous authors "If you want one year of prosperity grow seeds, ten years of prosperity grow trees and if you want 100 years of prosperity grow people". He gave clear instructions to the management to respect people and provide them environment where they feel motivated. We need to build their trust.*

The documents, interviews and informal discussions helped in identifying the important tasks of ICM team. The ICM team was responsible for:

- Promoting awareness about transformation initiatives and its benefits
- Motivating employees to accept the change through communicating its intended benefits
- To develop and promote knowledge sharing culture
- Putting efforts to manage and sustain the transformation

The management was of the point of view that people should be motivated and they should be given proper awareness about benefits that may be gained through transformation. The concerns
and issues of individuals and groups must be identified and addressed. ICM team planned and introduced change management, knowledge management and compliance of IT governance to manage and sustain transformation process.

### 4.2.9 Identifying issues and problems

The ICM team took the important decision of proactively identifying issues from different employees in the company. They conducted survey in the company regarding opinion and concerns of different employees about the transformation process. The major issues and concerns identified from the personals of IT department are as under:

<table>
<thead>
<tr>
<th>Concerns of IT Personal</th>
<th>Concerns about vendors</th>
</tr>
</thead>
<tbody>
<tr>
<td>It personals perceived that their role in future business process may be insignificant</td>
<td>Trust on vendors</td>
</tr>
<tr>
<td>Perception about their career growth</td>
<td>Doubts about vendor’s expertise and skills</td>
</tr>
<tr>
<td>Consider it layoff strategy of top management</td>
<td>Concerns about data and information security</td>
</tr>
<tr>
<td>IT expertise skills developed in the past would not be useful</td>
<td>Consider lack of ownership on the part of vendors</td>
</tr>
<tr>
<td></td>
<td>Reservations about rapport/relationship with the new vendors</td>
</tr>
</tbody>
</table>
knowledge management important and initiated these activities in parallel to the other main activities of process reengineering and out sourcing of IT services in the organization. The following part of this case will discuss the efforts of ICM team in this regard.

4.2.10 Change Management Activities

The ICM team took various initiatives to build trust of different stakeholders. They made efforts to manage and sustain transformation activities in the organization. The following activities of ICM team were identified:

- **Transformation Awareness:** The ICM team arranged awareness seminars and workshops to discuss and convey the need of transformation in the organization. The management was interested to share transformation initiative with everyone in the organization. One of the managers said:

  *We don’t want to create a shock….everyone should know the major change ....*

- **Communicating the Transformation Benefits:** ICM team developed effective communication system to openly share thoughts, concerns and opinion of different stakeholders. ICT tools like emails, intranet, and webinars were effectively used in communicating benefits of transformation. It was mandatory for everyone to give his /her opinion about transformation initiative. One of the managers voiced as “*Communication, communication and communication*”. He said:
Communication is the key and we tried to ensure that everyone should understand the need and benefit of transformation and most importantly the individual and organizational benefits of transformation journey.

- **Communicating Issues and Challenges:** The ICM team also arranged sessions of the top management with the employees of the company to share issues and challenges faced by the company. The top management openly discussed the issues and concerns about existing processes, technology- and further shared with them the future challenges of the industry. ICM team developed videos showing issues in the current systems and processes. The team identified and delineated dark side of the existing processes and bright side of the future processes. One of the members of the ICM team said:

  *We want everyone to unlearn the existing process, technology and interface he is used to... rather than they offer resistance to transformation proposed ...they are more curious about new systems.*

The issues and problems in the current process were communicated through video clips and some media activities and they were also shown the benefits of future processes. One of the members of dream team said:

*Few minutes of videos clips helped us in understanding the issues in the current processes and potential benefits of future processes as well*
• **Recreational Activities:** The ICM team arranged recreational trips with consultants to promote their healthy relationship with employees of this company. The celebrations on achieving milestones of transformation and appreciation from the top management arranged - helped a lot in creating healthy working environment in the company. The ICM team was used to arrange employees and their families’ get-together on achieving targets /milestones during the transformation process. Their families were also appreciated for their contribution. It encouraged and motivated the not only the employees but the families also got inspired as their contribution was realized. One of the managers said:

    *Our Global manager appreciated our family on successful completion of one of the tasks. He said, we know you [i.e. our families] sacrifice your time for our company. We can’t achieve success without your support that’s why we can’t celebrate without you*

Similar comments of another manager:

    *Our top management celebrated the success by giving special gifts to our families. We and our families were motivated by the consistent support and encouragement of our top management.*

• **Training and Development:** The ICM team developed a complete training and coaching plan to address the apprehensions of individuals and groups about their career growth and development. One of the managers said:
We discussed the expected change in roles along with training and development plan with the concerned employees ...

The management decided to provide training through line managers, and actively involved them in the process of training. The management was not only interested in providing technical training but also keen to aware individuals and groups about their role in overall business process. The management used training (one way) as well as coaching (two-way approach) for this purpose. The training was used to develop technical skills related to SAP and coaching to communicate future change in their roles and responsibilities. One of the employees shared training efforts and said:

We were trained how to use SAP for our specific job and functions in the organization, management discussed and communicated the change in our roles and responsibilities and also got our feedback .......

- **Leadership and Management Training:** The management realized the need of leadership and management training to develop the existing workforce to effectively manage and sustain the transformation process in the organization. **Growth Academy** was established to provide leadership and management training to employees of this company. The employees were more motivated and enthusiastic when they were getting training from gurus of management. One of the participants (managers) said:

The growth academy has changed us a lot. We were trained from the top professional like Stephen Covey [author of seven habits....]. There was a
considerable change in our approach, now we were more concerned about effectiveness than efficiency only

4.2.11 Managing Transformation through Knowledge Management

The use and adoption of knowledge management tools and application became the top priority agenda for the top management of this company. The management realized the role of knowledge management activities in successfully managing and sustaining transformation process in the organization. The ICM team took various knowledge management initiatives during the transformation journey and those were identified through documents, interviews with the managers, informal discussions with team members and observing the use of some systems by related to these initiatives The KM initiatives of ICM team were mostly related to:

**Knowledge Sharing**: The top management encouraged and appreciated knowledge sharing in the organization. The objective was to take into account the skills and experiences of the experienced employees to attain the maximum benefits for smooth running of transformation process. One of the managers said:

*We know our employees know the problems and their solutions better than us; we need to capture what is residing in their heads and hearts*

Prior to transformation initiative there was no practice to document individual experience, knowledge and lesson learned and even sharing of information culture in the organization. In order to overcome this discrepancy top management encouraged that the KM practices should be followed for the purpose. They adopted alternative ways to address the concerns of individual and groups in the organization through introducing KM practices and tools.
**Story Telling:** The ICM team used story telling technique (a knowledge management tool) to address the concerns of individual as well as groups in the organization. Other companies’ managers were invited to share their transformation experience with the managers and members of this company. The transformation outcome of in terms of change in roles and responsibilities of these respective companies were shared with the employees of this company. The managers and team members got inspired once they have heard success stories from their counterparts. Such activity helped a lot in mitigating the concerns and fears of employees especially the IT team about outsourcing of IT services to different vendors. The employees were found more motivated and enthusiastic after knowing the benefits of transformation both at individual and organizational level. The IT manager said:

> We considered this transformation as layoff strategy of the company [at the outset] but our perception and concerns were deposed once we heard the individual and organizational benefits of transformation.

**Acquiring Tacit Knowledge:** The senior members having experience and knowledge were identified and selected to proceed with process standardization. Those members were called Subject Matter Experts (SMEs). The dream team conducted brainstorming sessions with SMEs. Consequently, these sessions helped a lot in acquiring tacit knowledge, lesson learned and best practices those were documented for further use. One of the managers was of the view:

> We were able to document some valuable information about processes which was not [available] in the documents of the company but in the head and hearts of SMEs.
The tacit knowledge of different employees about processes and prevailing practices was documented and made available in explicit form. It was ensured the members concerned have access to this explicit information.

The ICM team also conducted different brainstorming sessions to get feedback from different departments and provided opportunity to the employees to share their ideas and concern about transformation. The feedback was also documented and then shared with the top management for information. The management then addressed their legitimate concerns on top priority. Such brainstorming sessions were fruitful and aided much more in understanding how to reengineer the business processes to achieve efficiency in the work processes.

**Explicit Knowledge sharing:** The intranet facility available in the company was used by the ICM team to provide facilities to all the users to share experiences and knowledge with each other. The team also developed a knowledge base consisting of lessons learnt regarding implementation of ERP systems and other best practices being used in the company. The ICM team encouraged use of blogs, COPs, webinars and other online communication facilities for sharing information and knowledge. One of the senior members of ICM team said:

*We were interested d to provide right information to the right person at the right time and right format.*

One of the team members said:

*We used our knowledge portal called it knowledge asset in designing our processes at the global level very effectively. Still we are using this intranet for different purpose. Different teams are generating relevant information on daily, weekly and monthly basis.*
The use of knowledge management tools applied helped employees and vendors from different regions to share valuable information and knowledge with each other. The ICM team display list of knowledge contributors on the intranet of company to encourage and motivate them.

4.2.12 Ensure compliance to IT governance

The ICM team considered IT governance as one of the important activities to successfully implement and sustain transformation in the organization. The ICM team ensured to share the details of this initiative with the relevant employees and also provided necessary training in this regard. The training regarding ITIL framework was one of the early initiatives of ICM team in this regard.

4.2.13 Results/Outcome of Transformation initiative

The top management and employees perceived this transformation effort successful in achieving transformation goals and objectives. The objectives of cost reduction, process standardization, globalized view and 24/7 support at the global level were achieved successfully. One of the managers shared the outcome of transformation and said:

*Our GIP initiative successfully achieved its objectives, I think we successfully achieved what we planned and desired…… more satisfied after transformation….. There were more than 400 reports before transformation and now only 40 after transformation*

*Similarly, another manager said:*

*The outsourcing of IT services has significantly reduced cost and enhanced performance, we are more satisfied with the IT services…… we are getting support and services without any interruption and delay and having globalized view*
The transformation benefits were noted from published reports of IBM, official letters showing some details of achievements of transformation and interviews of the senior management. The following are worth mentioning:

- 50% improvement in terms of cost reduction
- Successfully implemented GIP in more than 100 countries in two years
- Rapid access to reliable data and information
- Procurement staff has greater visibility of current and future materials requirements and it helped to prevent over- or under-stocking.
- Full visibility of its global end-to-end supply chain
- Greater optimization of stock levels and smarter inventory management helped in dramatic reduction in cost
- The materials and recipes now managed centrally to ensure consistent products globally and it helped us in reducing cost
- Information available through a single integrated system and it helped in providing updated information in minimum time and helped in effective decision making
- The culture of documenting the lessons learned helped in successfully implementing this initiative in more than 100 countries in minimum time.
- The standardized data and insight into the entire business, managers can make smarter strategic and operational decisions in minimum time
4.3 TRANSFORMATION OF PUBLIC SECTOR ORGANIZATION: (CASE STUDY B)

4.3.1. Introduction

The Directorate General of Immigration and Passport (DGI&P) a public sector organization working under Ministry of Interior, Pakistan was selected to proceed with our research in order to further extend our understanding about organizational transformation phenomena. In general, the organizational structure of public sector organizations in Pakistan is commonly hierarchical and dominated by a typical bureaucratic culture. The Directorate is headed by Director General (DG) and its major functions are to deal with issuance of passports, visas, matters relating to Pakistan citizenship and further providing services to the citizens of Pakistan residing in the country and settled abroad. Prior to initiation of transformation process the directorate was running work processes manually and ICT was scarcely in use to facilitate functioning of tasks efficiently and effectively. As a result, the performance of the Directorate could not be graded as ideal and outstanding. One of the apparent causes of poor efficiency might be attributed to lack of adoption and use of Information Communication Technology (ICT) which is basic need of the organizations in today’s era. In order to improve the performance of the directorate the management took an initiative to introduce major changes in working environment through adoption of ICT/IS in order to render better services at national and international level.

4.3.2 Need of Organizational Transformation

The need of transforming this organization was identified through interviews of the top management and senior officers, informal discussions with the staff and limitations of conventional work processes in practice was inferred from the available documentation.
services offered to the citizens of Pakistan at national and international level were not up to expectations of citizens due to various reasons affecting quality of services despite five regional passport offices (RPO) established in different cities in Pakistan. All the work processes to render services at directorate and regional levels were then carried out manually through SOPs in practice.

Rapid increase in population, growing demands of citizens, changes in external environment, lack of integration in work processes, non-adoption of state of the art technologies available in the market almost negatively affected quality of services expected on the part of citizens. One of the senior manager was of the view:

> The software applications/tools regarding office automation such as Excel Worksheet in use were not adding any values to improve the efficiency of work processes.

The prevalent system and work practices were unable to deliver services at a pace desired and expected by the citizens. The process of issuance of passport to a citizen on his request might take more than one month to be processed. No facility to track or get updated information about status of request submitted was available to the citizens. The office record was maintained on paper manually rather than electronically for further use and enquiry purposes. To maintain such type of office record/archives was not only risk prone but a challenging task as well. The growing trend in population growth, increasing frequency of requests from citizens for issuance of passports hardly could be handled with existing infrastructure and resources available in the Directorate. Consequently, it affected severely the performance and quality of services delivered. One of the senior managers commented:
There exists a risk of duplicate issuance of passport, theft of official record and some small practices on the part of agents caused serious concerns for the top management.

The situation got worsened due to rise of subsequent issues like issuance of duplicate passports and other small practices in the Directorate.

The availability of updated information to be conveyed to the top management in due course of time was almost difficult under such manual system in operation. The inefficient upward flow of information might appear as a big hurdle in effective decision making and strategic planning. Moreover, the existing systems was not capable to provide any access to customers for tracking status of applications submitted for remedial measure of the problems they were facing. One of the senior managers mentioned:

Our customers were more frustrated due to non-availability of any online tracking facility.

Secondly, after 9/11, the issues of terrorism and illegal migration and travelling abroad also created lot of challenges for the Government of Pakistan at international level. There was lot of pressure from United Nations (UN) and international community to adopt ICAO standard for quality processing of issuance and verification of passport related services to the citizens of Pakistan before 2015. One of the top executive said:

We were facing issues and challenges at national and international level, our existing processes and resources were unable to meet the demands and expectations of our customers at national and international level. We have no other option than major
change in process and adoption of IT otherwise our citizens would not be able to travel abroad

The success stories of NADRA (i.e. an organization responsible for issuing computerized ID cards to Pakistani citizens) also raised the expectations of citizens of Pakistan about services. The customers were expecting similar response and dealing from this Directorate too. Any discrepancy in fulfilling customer expectations usually cause disappointment and consequently left customer dissatisfied. The situation was also challenging for the top management. The top management was looking for a suitable solution to address the matter.

The top management apprehended that existing resources and work processes in practice could hardly meet the need and expectations of citizens, so the matter should be addressed leading to a satisfactory solution to provision of quality services to citizen. The major objective was not only provision of efficient services but include transparency, ensure security measures, preventing fraudulent practices of agent mafia and theft of official record, handling malpractice concerning issuance of duplicate passports and ensuring timely information required on the part of management and citizens. Furthermore, top management realized the need of availability of updated office record for enquiry purposes. In order to address the challenges highlighted so far, the Directorate finally decided to adopt ICT/IS and further bring changes in work processes in practice for an efficient and effective delivery of services to citizens.

The Ministry of Interior took the bold decision to launch Machine Readable Passport (MRP) project to overcome the issues and meet the current and future demands of citizens of Pakistan.
4.3.3 Project Initiative and Team Formation

Keeping in view the lack of trained human resources and required skillset, the top management decided to hire IT professional with sufficient experience and skills in relevant areas to overcome deficiencies already chalked out and to implement IS solutions to address the issues and challenges. Finally, a team was constituted comprising of members from HR, Finance departments and newly hired staff in different capacity. The team was then assigned task to evaluate feasibility of the project keeping in mind financial, technological, human resources requirements and expected outcomes of the MRP project.

4.3.4 Team efforts: Identifying problems in existing work process

One of the major responsibilities of team was to be well aware of problems/critical issues in the existing system. In this regard the team visited different Regional Passport Offices (RPO) and collected information from customers and employees regarding difficulties they were facing and limitations of existing system in delivering quality services etc. One of the senior managers said:

We spend more than six months in exploring, understanding and documenting issues and concerns of different stakeholders [customers and employees] in the existing process. We cannot predict future until we understand our past and present

Similarly, another senior manager said:

Before finalizing our tender document, we spend sufficient time in identifying issues and problems in the existing process. We identified the gap in the processes by comparing with ICAO standard. We also planned financial, technical and human resource requirements at this stage
The issues and concerns identified in the existing system may be briefly classified as under:

- **Technological aspects**
  - lack of adoption of IT
  - Lack of IT skills and experience
  - Lack of IT Infrastructure

- **Work Processes**
  - Inefficiency in the existing process causing delays etc.
  - Non-integration of processes and activities
  - Processes were not IT enabled
  - Status of work process hardly can be monitored

- **Information Availability**
  - Lack of availability of desired information
  - Lack of information sharing culture
  - Customers having no access to information they desired
  - Updated information was not available to customers so agent mafia was exploiting this situation

- **Behavioral /Environmental Issues**
  - Lack of customer care and support
  - Customers were not given respect
  - Behavior of staff not customer friendly
  - No procedure to get customer feedback
  - Lack of cooperation and coordination among Staff members
- Lack of motivation and commitment
- Everyone enjoying in their own comfort zone
- Lack of governance system to monitor and evaluate the performance and progress of employees
- Dissatisfaction of employees and customer with existing resources and facilities
- The existing work environment was not conducive

The issues identified by the team were brought to the notice of higher management. One of the team member shared:

_The executive of the directorate shared with the ministry the problems identified by our team. Finally, the top management took the decision of launching MRP project_

The top management of this directorate shared decision regarding MRP project with the senior officials of the Directorate to develop consensus. Furthermore, the concerns of Federal government regarding inefficiency of existing processes, security threats, international pressure and issues relating to passport validity and authenticity along with issues identified by the Directorate team were also communicated to the officials to invite their comments and suggestions.

In addition, the management clearly showed their intent to launch MRP project and advised all the stakeholders to fully cooperate in this regard. Such activities reflect the strategy of top management to develop consensus, create awareness among the people about intended future
change that may occur on implementing MRP in the Directorate. One of the senior officials said:

Management has clearly communicated and motivated the stakeholders regarding MRP decision and advised everyone to cooperate in this regard

The management also made efforts to communicate the future plan through meetings and seminars to the employees. Moreover, important memos/notifications were also issued in this regard. It was observed that everyone was fully aware of the major change expected in working environment to improve the prevailing work practices and SOPs and finally the existing system.

4.3.5 Outsourcing MRP Project

The existing resources and manpower of this directorate were unable to develop and implement systems like MRP. The management took the decision to outsource this project to third party because of lack of expertise and skills in the directorate. After completing the tender requirements, the project was assigned to NADRA on turnkey basis. The management preferred NADRA because it has successfully completed the project to deliver computerized NIC services to citizens of Pakistan. The team of Directorate worked in collaboration with the experts of NADRA to reform the existing system.

4.3.6 Collaborative working environment

The efforts were made by the management in creating and encouraging collaborative working environment in the organization. The responsibilities of NADRA and team of this directorate were clearly defined at the outset of the project. Participation of members of both parties was essential during meetings concerning important matters. The transformation roadmap was
developed through consensus by both the parties and major changes required in the system outlined.

4.3.7 Transformation Roadmap

The experts from NADRA developed a comprehensive transformation roadmap with the collaboration of transformation team of this Directorate. Both the teams reviewed the problems previously identified by the transformation team. The decision made was shared by a team member mentioning that the following aspects were finalized:

- Effective communication and collaboration must be ensured
- Sharing Success story of NADRA with the employees of this directorate
- Communicating the expected change in employees’ role in future
- Developing comprehensive training program for employees
- Reengineering the work processes (i.e. Business Process Reengineering)
- Effective communication with top management and acquiring support required
- Promoting Information sharing culture
- Provision of better environment to employees and customers

The detail of roadmap and efforts made by both the teams to comply with it is explained and elaborated to understand the process of transformation followed by the directorate.

4.3.8 Communication and Collaboration

Both the teams unanimously decided to develop good rapport, effective communication and collaboration environment between teams. They decided to use different tools/applications like
voice conferencing, video conferencing and effective use of emails to monitor, evaluate and
further share the progress of this project with the management. The top management also
couraged arranging weekly meetings of teams involved to discuss the progress and issues of
the project. One of the executive said:

*Every Monday [start of week] we were having meeting to discuss the progress and issues
of the project. The minutes of the meeting were circulated to the top management and
everyone was in picture what is happening in the organization*

The management also made efforts to encourage collaboration in the organization by effectively
managing relationships with the officials of NADRA. The management of both the departments
was very keen in successfully implementing this project. Both the parties owned the project and
success of this project was considered as a success for everyone. The top management
communicated the importance of this project to both the parties and developed a supportive
environment. One of the officials from NADRA said:

*This was a challenging task for our team, since this was our first commercial project and
we have to prove our skills, competence and expertise in this regard.*

Similarly, an official from this directorate (DGI&P) said:

*We know the success of this project means a lot for us, we know the experts from NADRA
were making efforts to transform and streamline our processes and ultimately, we were
the beneficiaries of this project*

Both the teams were collaborating and cooperating with each other and they know they were
having high stakes. It was the first commercial project of NADRA and they have to prove their
strengths and capabilities and similarly the management and team of this directorate know the importance and significance of this project. The mutual understanding and collaboration of these teams led to developing sense of ownership on the part of both teams.

4.3.9 Sharing Success Stories of NADRA

The management decided to share success story of NADRA with the employees of this directorate. The purpose was to create awareness about the benefits of ICT enabled changes and developing favorable attitude of the employees. One of the managers said:

The management was interested in communicating the benefits of implementation of IT in addition to creating awareness and motivation for this project.

The experts from NADRA shared their experiences and lessons learned and motivated the employees of this directorate. One of the senior officials said:

NADRA was a role model for us; we were told how the jobs were simplified after implementing IT and changing process in NADRA and we were hoping the same for our directorate.

Similar comments of another official were:

The successes of NADRA not only helped the top management to effectively plan, manage and execute their activities but employees and customers were also enjoying the benefits of this success.
4.3.10 Communicating the Future Role

The management also made efforts in identifying the change in roles and responsibilities of different employees. The change in roles and responsibilities was communicated to the concerned employees. They also developed training plan to develop the technical skills in the employees of this directorate. One of the officials of RPO said:

*Our HR team communicated us roles even before implementation of this system. I was responsible for manually pasting photographs in the register. I was trained on the same task now I am using digital cameras and system to capture and save photographs digitally.*

4.3.11 Developed Comprehensive Training Plan

The transformation team (both the teams from NADRA and this directorate) along with HR personal developed a plan to conduct training, seminars and workshops for the management and employees of this directorate. The following Table-1reflects some of the details about training, seminars and workshops arranged for this purpose.

<table>
<thead>
<tr>
<th>Training/seminar/workshop</th>
<th>Focus</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Computer Training</td>
<td>use of computer, word, Excel, power point, internet and email</td>
<td>For-everyone</td>
</tr>
<tr>
<td>Advance IT Training</td>
<td>Networks and Database</td>
<td>For-IT officials</td>
</tr>
<tr>
<td>Change-management</td>
<td>Managing and sustaining Change</td>
<td>For senior officials</td>
</tr>
<tr>
<td>Project management</td>
<td>Understanding and adopting PM-Practices</td>
<td>For senior officials</td>
</tr>
<tr>
<td>Customer care and support</td>
<td>Awareness about customer care and practices</td>
<td>For-everyone</td>
</tr>
</tbody>
</table>
The training and workshops were designed keeping in view current and future responsibilities of the employees. One of the senior officials from HR said:

*Training and workshops were designed in a customized way. Training and workshops were not designed and considered as a leisure activity [most of the time considered in public sector] ... we want to achieve our specific objectives like developing desired skills and competence*

These trainings and seminars have significant contribution in developing supportive and favorable environment for this transformation. One of the officials said:

*My perception about IT has been changed, IT is not complex but simple and more useful, now I can complete my task in minimum time with lot of accuracy*

Similarly, one of the senior officials of RPO said:

*Customer care workshop having significantly changed the approach of our RPO staff, now they understand and realized the importance of customer and give respect to them*

The change management workshops and trainings also helped the top officials to successfully manage and sustain change in the organization. The change management professional from the

<table>
<thead>
<tr>
<th>Information sharing and Management</th>
<th>Importance of information sharing and management</th>
<th>Employees of RPO</th>
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<tr>
<td></td>
<td></td>
<td>For everyone</td>
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</table>

Table 4.1 Training Plan
industry not only imparted basic training but also helped in developing effective strategy for change management. One of the senior officials said:

*Change management workshops and training helped us in understanding the importance of people in the organization, we learnt how to motivate them and minimize their resistance by participating them in the process....*

The project management training and workshops also helped the senior officials to understand and learn tools like MS project to successfully execute various other projects in the organization. The senior officials considered these applications useful and productive in managing small as well as large projects in the organization. One of the senior officials was of the view:

*We started displaying WBS [work breakdown structure] on the table, it helped us in proactively managing issues and problems of various projects*

The management encouraged and motivated employees to learn IT related tools and applications and gave them incentive of foreign posting. One of the managers said:

*We motivated our employees and staff to learn IT applications and make it mandatory for foreign posting. Employees took lot of interest in training. Everyone wants to be posted outside Pakistan.*

**4.3.12 Initiating Change in the Existing Processes**

The management made lot of efforts in understanding issues and problems in the existing process and redesigned the whole process by keeping in view the growing needs and demands of
customers and international community. The ICAO standard and guidelines were also followed in this regard. One of the senior officials said:

*MRP does not mean replacing registers with computers; We introduced major change in the existing process and adopted IT and moreover facilitated our employees and customers* 

It has been identified that the management and the team responsible for process redesign activities gave importance to the following factors.

4.3.12.1 **Participation of Stakeholders:** The management gave importance to the participation of relevant stakeholders by involving representatives from RPOs, HR, Finance and IT. The change in existing procedures and policies were also planned and proposed with mutual consent of all the parties and formally got approved from the top management.

4.3.12.2 **Integration of activities and Processes:** The importance was given to the integration of various activities within this directorate and across different departments like NADRA and FIA to solve the issues and problems related to authenticity and validity of data. One of the officials said:

*The integration with NADRA and FIA has minimized lot of serious problems like issuance of duplicate passports to criminals who were on ECL [exit control list].*

4.3.12.3 **Process Governance:** The importance was given to process governance activities to successfully implement and sustain changes in the process. The management approved and defined clearly procedures for initiating any change in the process or activity and
ensured to have standardized procedure adopted at all the RPOs and foreign missions. The roles and responsibilities of different personals to manage the process were clearly defined. The responsibilities of IT team to manage the technical side of the process were also clearly defined.

4.3.12.4 Monitoring and Feedback: The management also introduced process of monitoring and feedback system to monitor and manage the process. The customers were requested to give feedback at the end of process regarding attitude, behavior and cooperation of staff. They were also encouraged to use online complaint management system. The suggestions and complaints drop box and mobile messages were also used for this purpose. One of the manager said:

*We offered lot of value added services and took proactive decisions on the basis of feedback we received from our customers*

Similarly, another manager at RPO said:

*We compiled information we received from different means [mobile messages, online complaints and suggestions drop box] at the end of each month and took corrective actions to solve the problems. We are maintaining proper database for this purpose.*

4.3.12.5 Adopting best practices of NADRA: The management also learned and got benefit of the practices followed in NADRA regarding issuance of NIC to the citizens of Pakistan. The efforts were made by the management in simplification and integration of different activities involved in the process of issuance of passport.
The process of issuance of passport to the citizens of Pakistan is depicted in the following diagram. The integration of various activities has also been reflected in the diagram.

![Diagram of Passport Issuance Process]

**Fig. 4.3** Process for issuance of Passport adopted from website: http://www.dgip.gov.pk/

### 4.3.13 Developing and Implementing MRP System

The development of MRP system was outsourced to NADRA on turnkey basis. The MRP system as shown in Fig.4.3 was timely developed by the team of NADRA and implemented in major
cities of Pakistan. The following considerations were made by the top management while implementing this system at national and international level have been inferred through interviews and informal discussions:

- Developed required IT infrastructure in the RPO and foreign missions by acquiring required hardware and software including office equipment and furniture etc.
- On job training to the employees
- Monitoring performance of individual employees and ensured everyone was using system properly
- Marinating and evaluating log of daily activities to identify errors and omissions of individuals and provided required guidance and support
- Issues faced during implementation were documented and analyzed and saved in the database of lessons learned and provided access to the different teams responsible for implementing similar systems in other RPOs
- Appreciating and motivating employees to share information about problems and issues in the new system
- Employees were encouraged to cooperate at the peer level by solving problems related to process and IT. The mutual cooperation of process owners and IT team was encouraged and appreciated by the top management. The appreciation certificates were presented to groups and individuals on successful completion of tasks of project. Developed lessons learned database by documenting issues and problems faced while implementing MRP system in RPO
• Ensured IT governance by clearly indicating roles and responsibilities of Service provider i.e. NADRA and the employees of this directorate. The procedure for initiating any change in process and technology was defined and for this purpose a change management and monitoring team was also formed to monitor and manage the change related activities in the organization.

The MRP system was successfully implemented in more than 80 RPOs and 60 foreign missions. The top management considered MRP project as one of the successful initiatives of introducing major change in process, adoption of technology and changing behavior and mindset of people in public sector organizations of Pakistan. One of the senior officials said:

*The success of MRP project at national and international level is a complete package of introducing change in process, working environment, people mindset and adoption of IT. We cannot enjoy success by ignoring these factors*

### 4.3.14 Top Management Support

The MRP project enjoyed support from the top management of this directorate as well as from ministry and government of Pakistan. The top management motivation and consistent support truly helped in successfully implementing this project at the national and international level. The management ensured to allocate and provide sufficient budget for this important project. One of the senior officials said:

*Our top management has shown keen interest in the project and timely provided required resources*
Similarly, another official said:

*Our top management was with us not only in celebrating achievements but they were with us in hard times as well. They took keen interest in understanding problems and issues we faced during project and actively involved in providing solutions to these problems.*

### 4.3.15 Changing Workplace Environment

The management has not only focused on changing process and introducing IT but also made efforts in changing work place environment and took following initiatives:

- Changed the layout of the Processing counters according to the processing sequence
- Installed Digital Counters for visibility of Token/Processing Numbers
- Provided proper furniture and customized workstations to facilitate employees and customers
- Installed Electric water coolers with filter for clean drinking water
- Ensured cleanliness of the office premises
- Timely maintenance of electricity and other items installed in the office
- Ensured proper lighting and heating/cooling system
- Ensured polite behavior with customers/Cooperation with customers
- Displayed guidelines for issuance of passport
- Installed digital display counters to manage queue properly
- Installed LED’s to facilitate the applicant
The change in working environment has motivated employees to provide services to the citizens in a professional way. This change has significant impact on the performance of individuals and perception of customers. One of the senior officials of RPO said:

*The change in the working environment has significantly improved the performance of individuals and perceptions of our customers. Now our customers feel they are given proper respect and care rarely seen in the past.*

### 4.3.16 Sharing Information

The management has encouraged and promoted information sharing practices in the organization. The management has developed different means to capture and share information with the customers and employees in the organization. They took the following initiatives:

- Establishment of Information Desk at main entrance of RPO
- Displayed guidelines and instructional charts
- Providing access to public to monitor status of passport through help line/SMS/
- Online passport tracking system
- Online Complaint management system

The management considered sharing of information as important initiative towards creating people friendly and corruption free environment. One of the senior officials said:

*Access to the information helped to ensure transparency in process and reduced lot of exploitations of our customers*
4.3.17 Achievements and Transformation Outcome

The top management considered this transformation as a successful project and achieved the desired goals and objectives. Following list of transformation benefits has been compiled on the basis of interviews and necessary documentation:

- MRP service was expanded to more than 80 cities of Pakistan, before transformation this service was manually offered in 5 cities
- Establishment of more than 50 foreign missions to offer services to international citizens
- Significantly reduced process time (from several Months to weeks)
- Simplified process of fee submission through Mobicash services
- The volume of issuance of passport increased from one million to 4.5 million per year
- Transparency in the overall process
- Provided information access to customers
- Developed credibility and authenticity of passport at international level
- Discouraged and eliminated the role of agent mafia
- Integration of information with NADRA and FIA and facilitated border management system
- Printing backlog of 800,000 Passport cleared
- Home delivery service in major cities started
- Launching of E-Services portal and online application process completed in just 16.5 minutes

The overall transformation initiative has significantly improved the performance of individuals and enhanced efficiency in the organization.
4.4 TRANSFORMATION OF PUBLIC SECTOR ORGANIZATION
(CASE STUDY C)

4.4.1. Introduction

The organization selected as a case is one of the companies that deal in exploration of natural resources particularly oil and gas in the country. The main departments of this company were responsible for activities like conducting geological surveys, exploration of oil and gas resources and most importantly the production, refinement and selling of oil and gas in the country. This company can be divided into mainly two segments. One segment is based on core activities like exploration and development and the other area is related to support activities like Finance, HR, IT and supply chain management in the organization. This company has more than 10,000 employees in more than fifteen different cities of Pakistan. The name of this company is anonymous because the management was reluctant to disclose it. Being a public sector organization, the culture and working environment of this company is dominated by work practices mostly common in public sector which are bureaucratic in nature regarding its formations and structure.

There was not any integrated system in the organization. The support departments were having independent customized software applications installed to carry out their work processes. The legacy systems in operation were not integrated causing inconsistency of data among different departments. The existing systems were not efficient enough and do not meet the current as well as future needs of the organization. The inefficiencies in the supporting activities if any consequently would impede successful management of core activities. The management realized such weaknesses that may restrict organization to achieve its goals. The top management was looking for more appropriate solutions to address the matter. Before 1990, the company selected
for this case was recognized as corporation. However, afterwards the government of Pakistan decided to register this corporation as Public limited company in Security and Exchange Commission of Pakistan (SECP). Such decision on the part of Government raised various challenges for the top management to deal with the situation for smooth running of the company.

4.4.2 Need of Organizational Transformation:

Although customized applications were running in each department independently to meet their respective needs but as a whole such applications were unable to consolidate information required at organizational level. Despite automation of work processes at departmental level the work processes were hardly fully automated. Some of business processes were still carried out manually which consequently impeded the access to currently needed information required by top management in time. Under such circumstances it was too difficult to make timely decision and it might negatively affect smooth running of the organization.

The availability of consolidated information needed for strategic decision making was a challenging issue. The legacy systems were mostly transaction based and did not meet the requirements of the top management regarding strategy formulation and important decision making in the organization. The then situation demanded fundamental changes to be introduced in business processes to fulfill top management information needs and subsequently achieving efficiency and effectiveness on the part of organization.

Timely information is always a prerequisite for effective decision making. The existing legacy systems in operation were not capable enough to provide timely information to meet the legal requirements of SECP. Non availability of currently needed information to top management was identified as serious challenge that was needed to be addressed. One of the serious concerns for
the managers was to timely respond to the requirements of SECP. One of the senior managers mentioned:

\[
\text{Our existing systems were unable to meet the statutory requirements of SECP and it was a serious concern for the top management.}
\]

Furthermore, the Government of Pakistan withdrew the financial support that was being provided in past to the corporation. The withdrawn of financial support from government of Pakistan also caused lacking of financial resources availability and it appeared as crucial challenge. The challenge a head was to generate resources to run this organization on self-finance basis in future. For the top management, no option was left other than formulating a strategy and proper planning to generate financial resources for smooth running of the organization leading to achieving the goals. One of the senior managers said:

\[
\text{The withdrawn of financial support by the Government has created serious challenge for the top management and we have to rely on donor agencies like Asian development bank and World Bank.}
\]

The exploration and development activities were financed through loans from different international agencies. The management was also facing pressure from different donor agencies regarding efficiency and effectiveness in existing processes and submission of reports according to their requirements. There was a dire need of updated information related to various organizational aspects in detail and summarized format. The existing legacy systems were unable to provide desired information to the top management for effective decision making as the reports being generated by such systems were not adequate. For example, as far as inventory of the organization is concerned it was so mismanaged that inventory details could hardly be
acquired using inventory management system. Inventory related issues were handled manually by the staff concerned. Manually handling of inventory status caused a lot of problems concerning inconsistency, inaccuracy and redundancy of data. Secondly, the work processes relating to financial aspects were not managed very well. Despite management interest and efforts made so far to automate HR and Finance related activities, the tasks were carried out manually causing delay and consequently slow down the process to achieve milestones. The lack of integration of applications being run independently by each department led to data inconsistency and negatively affected information flow among the departments and finally to top management. The summarized information required at strategic level was a big challenge. The management was unable to get complete reporting comprising cross departmental information required at organizational level. Furthermore, real time visibility and status of business processes in progress were almost difficult to be acquired in due course of time. Comments of a senior manager are as under:

_Our systems and processes were not integrated and managed properly; every department was working in isolation and using different applications. It was very difficult for us to maintain and update data at the organizational level._

In order to address the matter, the senior managers from finance department took an initiative to adopt ERP systems as a remedial measure expecting that it might help to address the issues faced by the organization. It seemed to be a major decision to bring changes into working environment and business processes for timely information and to achieve organizational efficiency and effectiveness leading to profit driven organization.
4.4.3 Initiating Organizational Transformation

Since the implementation of legacy systems in the organization there exist no IT department to manage such systems regarding support and maintenance. Every department was managing computerized applications at their own. In order to address the issues already mentioned in previous paragraphs, the department of Finance took an initiative to adopt of ERP systems as directed by top management. Such attempt might help to transform existing work process and to use best practices as claimed by ERP solutions. A senior manager from finance was responsible for managing technical and social aspects regarding the change that might happen in adopting new technology in the organization. The decision to get ERP systems implemented in the organization was initiated mainly by the department of Finance; however, top management also supported the initiative. One of the senior managers said:

*Our Finance department was having leading role in the transformation process and most of the decisions were made by senior officials of this department*

The initiative taken so far focused on monitoring, controlling and supervision various activities being carried out for running the organization smoothly. Moreover, the objective was also to integrate the work processes, cost effective, functional efficiency leading to increasing performance of the organization and submission of required information in a minimum time to various agencies at national and international level. The comments of one of the senior managers reflect the motives of top management for introducing such a technology driven major change. He said:
The focus of finance [senior officials of finance] always looking for control, monitoring and cost reduction. Same happened in our case.

Similarly, another manager said:

Timely submission of reports related to finance and major projects to the national and international organizations was one of the serious concerns for the management ........

The management thought out that implementation of ERP systems in the organization would be supportive in managing organizational work processes proficiently. The management made some efforts in identifying suitable ERP solution and invited tender for this purpose. Finally management was in favor of implementing Oracle based ERP solution and considered it suitable and cost effective as compared to other ERP solutions like SAP. The project was assigned to one of the IT companies in Islamabad. One of the senior officials said:

.... Some of our senior managers consider oracle as suitable because of its cost ...., Cost was the main consideration [of finance managers] for selection of solution.... However, there were some opinions in favor of SAP solution but our finance department was reluctant to adopt this system.

4.4.4 Transformation Strategy

The main focus of the top management was reviewing existing processes, development of IT infrastructure and adoption of ERP solution in the organization. The management got the services of some consultants from IBM in redesigning the existing process related to HR, Finance, Material management and Supply chain activities in the organization. The development
and implementation of IT infrastructure was outsourced to third party. The transformation initiative comprised of the following activities:

- Development of ICT infrastructure
- Business Process Reengineering (BPR)
- Implementation of ERP solution

### 4.4.5 Development of ICT Infrastructure

The top management decided to outsource the development and implementation of ICT infrastructure in the organization at the country level. The management was fully dependent on third party because of non-availability of IT workforce in the organization. The department of finance was playing leading role in preparing tender documents and completing other legal formalities and finally assigned this project to one of the leading companies in Islamabad. This company has successfully implemented LAN as well as WAN in the company. The remote offices were connected through different WAN services and the management was able to connect and communicate through different applications. The management has signed service level agreement with company to manage and sustain ICT infrastructure in the company. The services of some consultants were also hired in preparation of service level agreement. The responsibilities of the service providers to manage and sustain ICT infrastructure were clearly mentioned in black and white form and both the parties signed and implemented the final draft. One of the senior managers said:
We were conscious in preparing service level agreement because we were not having desired IT expertise and we were dependent on third party. We spent lot of time in preparing service level agreement and it really helped in managing issues and problems later on.

4.4.6 Business Process Reengineering (BPR)

The team comprising of consultants, members from finance and representatives of respective departments was formed to review the existing work processes related to support activities like finance, HR, procurement and material management etc. in the organization. This team faced serious problem of availability of documented information regarding existing processes prevailing in the organization. The existing processes were not documented properly and information was not available to recommend “to be processes” clearly. To address the matter, the team chalked out a strategy and initiated the following tasks for deep understanding about existing work processes and further their reengineering to be more efficient and effective.

- Conducted survey for understanding “As- Is processes”
- Suggestions/Recommendation forwarded for potential “To- Be processes”

The As-Is survey was conducted to understand and to be aware of the issues and problems in the existing processes. This survey was mainly consisting of the following activities.

1. **Scoping**: Define organizational units for survey and planned interview of the officials concerned

2. **Conduct Interviews and workshops**: To understand key process and activities and identify issues and problems in the existing process
3. **Preparing Documentation**: Documentation of AS Is processes along with issues and problems

4. **Validation process**: Validating the As Is processes from the participants and integrating their feedback before finalizing documentation

5. **Obtain Signoff**: Follow up signoff processes from the participants

The existing processes called As-Is processes were documented along with issues and problems and shared with the top management, departments concerned and stakeholders. The As-Is processes were compared with the best practices prevailing in the industry for benchmarking. The problems and issues identified were addressed and finally To-Be processes were recommended with the consensus of stakeholder those participated in the process.

**4.4.7 Response to BPR activities**

Although the team responsible for BPR activities worked very hard in understanding issues and problems in the existing processes and recommended future processes by incorporating best practices but it was not appreciated by all the departments in the organization. Only the finance department gave positive response and showed consent to implement the recommendations made regarding adoption of To-Be processes in future. One of the members of this team said:

…. *Only Finance department has shown interest and willingness of implementation of our recommendations for To-Be processes but all other departments were reluctant and shown lot of resistance* …. 

Similar comments of another senior manager:

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The resistance may be due to their less representation as compare to the participation and involvement of finance in most of the activities

The management was facing serious pressures from union, pressure groups and employees from different departments regarding reengineering of existing processes. The call for strike from the union also made serious challenges for the top management. One of the senior managers said:

*Our top management was unable to handle pressure from union regarding the reengineering the process of material management and overall supply chain. They don’t want transparency and need to protect their mall practices.....*

Similarly, another manager said:

*Our union and pressure groups exploited the issue of BPR through negative propaganda like loss of job and layoff etc....every employee first need job security and can’t compromise...... our top management was unable to convince employees about this issue*

Although the top management made some efforts to convince employees about this issue and initiated some change management activities. They arranged some seminars and workshops but they were unable to convince and motivate employees about this issue. One of the senior managers was of the view:

*I think the timing of initiating change management activities were not appropriate and negative forces took the lead by communicating and propagating negative aspects of BPR*

Finally, the top management decided to partially implement the recommendation of BPR team by implementing only in HR and Finance only and postpone the idea of BPR in other
departments. The ERP systems were implemented with maximum customization approach in these departments.

4.4.8 Implementation of ERP System

The management has decided to implement four modules of ERP system to support HR, Finance and Supply Chain and Material Management in the organization. The decision of the top management to partially implement recommendations of BPR activities resulted in implementation of ERP system through a customization approach. The ERP vendors were forced to make changes in the system according to the conventional practices prevailing in the organization. One of the senior managers from Material Management department said:

We forced our consultants to change system as we wish and asked major changes in the system not in processes....

The ERP systems were implemented with maximum customization and minimum changes in the processes and moreover the four modules related to finance, controlling, HR and material management were implemented in parallel. The ERP consultants were responsible for implementation of these modules in respective departments.

4.4.9 Socio-technical Issues and Challenges

The transformation initiative created lot of challenges and issues for the top management of this organization. The issues and challenges identified and highlighted were not only technical as expected by the management but mostly related to employee’s behavior and mindset. One of the managers from procurement and material management said:
We were expecting more IT related problems, since we were implementing ERP systems for the first time but our social problems were more of severe in nature as compared to technical problems

The negative propaganda against BPR activities in the organization has already created confusion in the minds of the people. People considered ERP systems as threat to their jobs. They were not cooperating with the ERP team. They were not having trust on the new system proposed. The overall environment in the organization was not supportive to bring such change. The management faced lot of socio-technical challenges and these are reflected in the following table.

<table>
<thead>
<tr>
<th>Technical</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Nonexistence of proper IT department and lack of in-house IT expertise and skills</td>
<td>• Lack of consistent support from top management, shown interest in the early part but unable to maintain the interest</td>
</tr>
<tr>
<td>• Non availability of Standardized WAN services in remote cities</td>
<td>• Change in the leadership at the critical time of implementation</td>
</tr>
<tr>
<td>• Lack of IT Support and services at remote cities</td>
<td>• Retirement of senior employees who were actively involved in early part of transformation</td>
</tr>
<tr>
<td>• Lack of end-to-end process integration</td>
<td>• Lack of cooperation and support from</td>
</tr>
<tr>
<td>• Data migration from old to new system</td>
<td></td>
</tr>
<tr>
<td>• Lack of long-term IT policy</td>
<td></td>
</tr>
<tr>
<td>Socio-technical issues and challenges</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------</td>
<td></td>
</tr>
<tr>
<td>• Less importance given to BPR and too much focus on customization</td>
<td></td>
</tr>
<tr>
<td>• Lack of cooperation and information sharing with ERP consultants</td>
<td></td>
</tr>
<tr>
<td>• Lack of Trust on new system</td>
<td></td>
</tr>
<tr>
<td>• Non acceptance of new system. Most of the employees considered old system more useful</td>
<td></td>
</tr>
<tr>
<td>• Lack of ownership, people considered it a project of Finance Department</td>
<td></td>
</tr>
<tr>
<td>• Issues of transparency</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.2 Socio-technical issues and challenges

### 4.4.10 Remedial Measures

The top management tried at its level best to address the problems and took various actions. The following part of this case study will reveal the efforts made by the top management in this regard.

#### 4.4.10.1 Change in Leadership

The change in the top management was considered as one of the major challenge faced by the organization at the critical time of introducing major change in the organization. The change in the leadership has not only created issues but also helped in solving complex issues of transformation in the organization. The newly appointed chairman having IT background and
international exposure took various actions with the help of senior management to streamline the process of transformation. One of the senior officials said:

The newly appointed chairmen has tried lot of damage control through his experience and international exposure and took interesting decisions

4.4.10.2 Establishing IT Department

The management decided to establish IT department to look after and manage the IT related tasks in the organization. Prior to establishment of IT department, the finance department was responsible for implementation and management of IT services in the organization. The IT experts were working under finance department and there was no long term plan for IT in the organization. One of the senior officials of IT department said:

We were not having proper IT policy or long term strategy; we were just troubleshooting and trying to solve the problems

The establishment of IT department has helped in successfully managing IT services in the organization. Since the IT services were outsourced to the third party, the IT department has helped in ensuring availability of IT services to all the departments in the organization. It further helped the top management to have less reliance on outside consultants in making critical decisions about IT in the organization. The perception of individuals in the organization about IT projects has been changed. Now they consider IT enabled change not only the initiative of Finance department to improve controlling and cost reduction. One of the senior officials from HR department said:

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The perception of individuals about IT initiatives has been changed, now they did not consider any IT related project as purely initiative of finance department having limited scope i.e. to reduce cost and improve controlling in the organization.

4.4.10.3 Developing IT policy

The management also assigned the task to the senior management of IT department to develop long term IT policy to meet the current and future needs of the organization. The IT policy was developed with the consultation of main stakeholders in the organization. The following important considerations were made in developing IT policy for the organization:

- IT Governance
- Standardization of software and hardware in the company
- Five years plan regarding development of IT infrastructure
- Development of IT expertise and workforce to minimize reliance on outside consultants and third party
- Data/Information security and sharing policy
- Revised agreements with the third party regarding provision of IT services in the organization

These efforts helped the management to manage the technical problems and issues related to IT infrastructure deployment and implementation in the organization. The service level agreement with the third party also helped the management to resolve issues concerning acquisition of IT services smoothly in the organization. The issues and problems related to IT infrastructure deployment and implementation were minimized.
4.4.10.4 Establishing Training Department

The management realized the dire need of a training department to meet the current training requirements of the company. They established training department and appointed one of the senior managers to look after the training needs of the company. This training department has arranged extensive IT trainings for the senior management and staff and ensured to provide basic IT training to everyone at the organization level. The training department helped the top management in solving critical issue of IT literacy in the organization. Moreover, the ERP consultants provided IT and system related training to the employees and developed master trainers for four modules. These master trainers further provided training to the employees in their respective department. The extensive IT training was provided to the staff and senior management but still they were reluctant to use ERP systems in their daily routine. One of the senior managers was of the view:

_Although lot of efforts were made by the management in providing IT and system level training but people were still reluctant to use system due to various reasons_

Similar comments of another senior manager regarding the impact of training activities in the organization. He said:

_We trained our staff after implementation of ERP system, it would be more effective if training has been planned earlier...we should have system trained people at the time of ERP implementation but this was not the case....._
4.4.10.5 Mandatory use of ERP system

The top management has forced everyone to use these systems and issued notifications and memos from time to time. Moreover, they also encouraged the use of these systems by making it part of ACR. The employees have shown lot of resistance about this decision of management so much so that the management has to withdraw this decision as well.

4.4.11 Results/Outcomes of ICT Enabled Transformation

The results/outcomes of an attempt regarding ICT enabled organizational transformation partially achieved the objectives and it may be termed as disappointing rather than a failure. Among the four ERP modules that were planned to be implemented, only two modules related to Finance and HR implemented were accepted by their respective departments and that were being used. On the other hand, other modules (Material Management and Supply chain) implemented were left unused despite its use was mandatory. One of the senior managers said:

\[
\begin{align*}
\text{We were unable to achieve the desired results of ERP systems in the organization. Only module related to GL[General Ledger] and payroll were implemented successfully.} \\
\text{There were disappointing results of other modules.}
\end{align*}
\]

Similarly, another manager unveiled:

\[
\begin{align*}
\text{We did not receive similar response as we got from finance and HR department. We have no other option than maintaining old and new systems for a long time. Our employees prefer to use the old system and consider new system difficult and complicated}
\end{align*}
\]
The management was unable to achieve the desired objectives/results through a major change indebted to implementation of ERP systems that were supposed to replace legacy systems. Under such circumstances, the organization must have to manage old as well as new systems in parallel. Although ERP modules related to Finance, HR were in use, however, they did not meet the expectations of top management because submission of timely information to SECP and other agencies remained unresolved. It added disappointment and top management hardly used ERP as it was not able to produce reports desired by top management. It caused frustration and disappointment on the part of top management. Only the middle management and lower staff were users of newly implemented system. One of the senior managers said:

*Our top management did not get the benefit of such systems for decision making; the reporting requirements for the top management were not met*

Another manager said:

*The systems were not used by the top management. The lower level management and staff were using these systems. Lack of use at the top level may be due to non-availability of intelligent systems*

Consequently, the top management did not get any benefits in return after implementation of ERP in the organization. Only HR and Finance departments seemed to be beneficiary and gained limited benefits from adoption of ERP systems.

The top management assigned a task to the IT department to evaluate the performance of ERP system implemented approximately three years back in the organization and further asked them to give recommendations regarding the use of these systems in the organization.
The IT department identified deficiencies in the current ERP systems and opinioned that existing ERP systems cannot meet the current as well as future needs of the company. The department forwarded its recommendations to the top management and proposed re-implementation of ERP system in the organization along with fundamental changes in processes and mindset of the employees. The top management consulted with different stakeholders the suggestions forwarded by IT department regarding re-implementation of ERP systems in the organization. One of the senior executive said:

*Since it was a major decision and lot of cost involved in the process of re-implementation of ERP system, our top management was conscious at this time .......and made lot of discussions for this purpose... finally decided re-implementation of ERP systems along with fundamental changes in process and people mindset*

Finally, the top management agreed to make another attempt to address the persisting issues that were hampering smooth running of the company. The management took a bold and challenging decision to re-implement ERP systems along with fundamental changes in process and mind set of individuals in spite of having lot of cost and resources required for this initiative.
4.5 TRANSFORMING SECP INTO KNOWLEDGE BASED ORGANIZATION (CASE STUDY-D)

4.5.1 Introduction

The organization selected for the case study is The Securities and Exchange Commission of Pakistan (SECP). It was established in 1999 to regulate corporate and capital markets. Other responsibilities include supervision and regulation of non-banking finance companies, insurance companies and private pension schemes in the country. More than five hundred employees are working in eight regional offices in Pakistan. The existing culture and working environment looked to be consistent with other public sector organization in Pakistan that is commonly bureaucratic. The overall performance of company could not be graded as outstanding. The World Bank report ranked it on lowest side that indicates deficiencies on its part in delivering quality services to the business sector in Pakistan.

The flow of information among the regional offices was also slow due to ineffective work processes. The top management was facing problems of non-availability of timely needed information for effective decision making. Inefficient work processes ultimately may affect the productivity and organizational performance. Other challenges such as high employees’ turnover, mistrust among employees, lack of coordination were also frustrating issues for the management. As the top leadership changed in 2005, they correctly realized the severity of the matter and envisioned that only key to overcome the problematic situation is organizational transformation and its management. The top management took a strategic decision of transforming this organization into a knowledge based organization in order to meet the challenges of the 21\textsuperscript{th} Century. The following part of this case study reflects how transformation
initiative was planned to overall improve the performance of the company to achieve its desired objectives.

4.5.2 Need of Organizational Transformation

The report of World Bank regarding ease of doing business in countries across the world has shown lowest ranking of Pakistan. It has created alarming situation for the top management of this organization. One of the senior managers said:

According to World Bank report Pakistan was having 89th ranking and it shows very poor status of providing desired services to encourage and ease business in the country.

Secondly, the management was also receiving lot of complaints from corporate customers regarding delay and inefficiency in the process of company registration. The process of registrations of companies was hardly being managed effectively by SECP. The registration process was manual. The organization did not adopt Information Systems to automate work processes for efficient delivery of services needed to the customers whereas Information systems are the most important tool helps organization to improve their functional capacity by providing reliable and complete information in a timely manner for effective decision making. One of the managers was of the view:

Since we were offering most of the services manually to our customers, they were not satisfied and we were unable to meet their expectations

The existing culture of the organization was dominated by public sector working practices.
Customer care and support seemed to be not a priority of organization so leaving the customers dissatisfied with services they were getting. The customers were usually complaining about non-cooperative attitude and discourteous behavior of employees to the management concerned. One of the senior officials revealed the situation and said:

Our top management was receiving serious complaints regarding behavior and non-cooperative attitude of employees and sometime senior officials of the government have also shown concern about this issue.

In addition, there was lack of commitment on the part of employees the top management was also facing problems concerning slow response from the employees. There was distrust among employees that was impeding cooperation and collaboration required to run the things smoothly. The management was also facing serious challenges to attract competent and skillful professional due to prevailing HR practices and consequently employees’ turnover was high leading to lack of manpower required. Such challenges ahead were needed to be dealt on priority basis to cope with the situation.

The management realized the alarming situation and decided to invite services of consultants for their opinion to overcome the severity of issues/problems affecting performance of organization badly. One of the senior officials shared about the top management approach in this context and said:

Our top management decided to involve OD [organizational development] consultants regarding identifying and analyzing problems and suitable solutions.
The professional consultants having expertise of organizational development and having international exposure were hired to address the matter. The consultants hired conducted surveys and arranged interviews with customers and employees of the organization to dig out reasons behind those were causing embarrassing situation. Finally, they submitted a report to the top management regarding the issues and problems they identified along with solutions proposed.

One of the senior managers shared his view:

*The problems identified were related to people, process and technology and management was asked to plan major change about these aspects*

Similarly, other senior officials said:

*The problems identified were mostly related to lack of importance given to employees and customers in addition to inappropriate organizational structure, in-efficient work process and non-adoption of [information] technology in the organization.*

On the basis of interviews with the top management the problems identified by the external OD consultants may be classified as under:
## Taxonomy of various issues identified

<table>
<thead>
<tr>
<th>People related</th>
<th>Processes related</th>
<th>Information/Communication related</th>
<th>IT related</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of employees participation in</td>
<td>Inefficient work processes (i.e. company registration etc.)</td>
<td>Lack of information sharing / sharing practices</td>
<td>Lack of IT infrastructure</td>
</tr>
<tr>
<td>organizational matters</td>
<td>Lack of standardized processes</td>
<td>Least importance given to information management</td>
<td>Nonexistence of integrated IS systems</td>
</tr>
<tr>
<td>Lack of standard HR practices</td>
<td>Reengineering of HR, Finance, company registration and evaluation processes</td>
<td>Non-availability of timely/current information</td>
<td>Absence of IT strategy</td>
</tr>
<tr>
<td>Noncompetitive employee compensation</td>
<td>required.</td>
<td>Lack of effective communication between customers and employees</td>
<td>Lack of cooperation between IT and business departments</td>
</tr>
<tr>
<td>Lack of Training and development</td>
<td>Existing processes were not integrated</td>
<td>Information not arranged/documentated</td>
<td></td>
</tr>
<tr>
<td>Lack of performance evaluation and</td>
<td></td>
<td>Lack of effective communication/collaboration</td>
<td></td>
</tr>
<tr>
<td>management</td>
<td></td>
<td>among departments</td>
<td></td>
</tr>
</tbody>
</table>

Table- 4.3 Issues identified by the external consultants

Keeping in view the recommendations of consultants and proposed solution, the top management decided to transform this organization into a “knowledge-based organization”. The top management envisioned that fundamental changes in the domain of people, process and technology a prerequisite to proceed with the process of organizational transformation. The message of the chairman published in the official newsletter of SECP (see Vision Vol-1) reflects
the overall the potential aim and objectives of the top management:

…..”The overall aim of SECP is to be ranked among the best regulators in the region- in terms of fulfilling the development needs of our capital market, non-banking financial, insurance and corporate sectors……To achieve this aim, the commission has focused on a strategy of adding value through our people, process and systems”……

Moreover the intentions of the top management to transform this organization to knowledge-based organization are reflected in the following part of the message of chairman published in the newsletter.


“We have formed a team to manage the transformation of SECP into a knowledge based organization and we are in the process of preparing SOPs for all areas of operation within the SECP”

Such determination and commitment of top management led to different actions to be taken such as ensuring support for organizational transformational, establishing Transformation and Knowledge Management Department, portal development to be online, change management, employees training etc. to achieve the purpose.

4.5.3 Establishing Transformation and Knowledge Management Department

The top management developed an appropriate and supportive strategy at the outset of organizational transformation. Established “Department of Transformation and Knowledge Management” responsible for planning, managing and monitoring transformation activities in
the organization under the guidance of top management. The members of this department and
teams constituted were selected by the top management keeping in view experience, skills,
relevant expertise and their motivation and commitment. Furthermore, the repo of the individual
in the organization was also included in the criterion followed for selection process. One of the
senior officials said:

*The members of TKM [Transformation and Knowledge Management Department] were
selected on the basis of their cooperative attitude and repo they were enjoying in the
organization*

The management also hired the services of experts from the industry having experience of
knowledge management and transformation of organizations at national and international level.
The chairperson who was entrusted the responsibility of this department/team was possessing
extensive and diversified experience capable enough to manage various activities concerning
implementing ICT, Knowledge Management and Change Management. The comments of the
senior executive talked about importance given to hiring of Chief Transformation Officer (CTO)
by the top management and shared:

*Our top management was conscious in hiring CTO; they knew his vital role in
successfully managing and executing transformation activities in the organization.*

The responsibilities of TKM were identified through interviews, informal discussions with the
team members of TKM and consulting relevant available documentation about transformation
initiative. The following objectives of TKM were inferred and summarized as under:
• To proactively plan the transformation activities about people, process and technology
• To monitor, manage and sustain the process of transformation
• To encourage and promote knowledge sharing and knowledge management culture in the organization
• To bridge the gap between IT and business process owners
• To assist the process of BPR by facilitating communication and cooperation among ERP consultants and business process owners
• To provide consistent feedback to the top management regarding the updated status of transformation activities to be carried out and acquiring continuous top management support during all phases of transformation cycle.

4.5.4 Transformation Strategy

The transformation strategy developed by TKM department was explored through interviews with the senior managers and informal discussions with team members of TKM department. The major considerations inferred are as under:

The top management preferred to adopt proactive approach to deal with transformation with organizational transformation aspects related to people, process and technology.

4.5.4.1 The Strategic aspects related to people: The strategic aspects related to people were mainly consisted of:

• Encouraging participation of employees particularly the major stakeholders during
process of transformation

- Creating awareness about transformation initiative and developing supportive environment for transformation by communicating benefits of transformation to the employees and customers of the organization
- Developing training and development plan with the consultation with HR and IT department to prepare desired workforce for the future.
- Creating an environment where people can freely communicate and share ideas and opinion
- Encouraging and motivating individuals to share information at the peer level within the department and across departments in the organization
- Developing collaborative culture in the organization
- HR department developed employee friendly HR policy
- Employee motivation Intrinsic/extrinsic
- Career planning and development
- Communicating career growth plan to the individuals
- Providing Medical facilities

4.5.4.2 Process related strategy: The process related strategy was explored through interviews, documents and informal discussions and it mainly encompassed:

- Documenting the current processes with the help of process owners
- Exploring issues in the current process with the consent and collaboration of relevant business process owners
• Identifying gap in the current processes by comparing with best practices
• Communicating and sharing problems and issues identified during the process and getting feedback
• Ensuring collaboration among Business process owners and consultants to effectively conduct BPR activities
• Planning future business processes by keeping in view the impact on people in the organization
• Planning processes integration by considering the technical requirements

4.5.4.3 ICT/IS Strategy: As reflected in the interviews and informal discussions encompasses:

• Enabling role of Technology
• Out sourcing Development of IT infrastructure LAN/WAN
• Developing IT systems and infrastructure to meet the current and future business needs of the organization
• Development of e-Services to facilitate the corporate sector, practitioners, consultants and public at large to enable availability of name, incorporation of companies and e-filing of statutory returns.
• Implementation of ERP modules related to HR(HRIS) and Finance
• Development of portals for sharing valuable information and social applications like blogs etc.
• Developing IT governance plan
Promoting and encouraging E-culture

Conducting survey/customer feedback regarding IT services and systems

Evaluation of IS systems and applications in the organization

4.5.5 Transformation Plan

The TKM team developed a transformation plan to monitor, manage and sustain transformation activities in the organization. The transformation plan consists of following two types of activities:

<table>
<thead>
<tr>
<th>Transformation support activities</th>
<th>Transformation core activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Management Initiative</td>
<td>Development of ICT infrastructure</td>
</tr>
<tr>
<td>Change management initiative</td>
<td>(LAN/WAN)</td>
</tr>
<tr>
<td>IT Governance</td>
<td>Business Process Management</td>
</tr>
<tr>
<td>Training and Development</td>
<td>E-Services</td>
</tr>
<tr>
<td>Developing Soft image</td>
<td>ERP Implementation (HRIS/Finance Modules)</td>
</tr>
</tbody>
</table>

Table 4.4 Transformation activities

The management considered support activities equally important with core activities in the success of transformation. The chief transformation officer was of the view:

*In transformation support activities have equal importance with core activities, one should not confuse with the apparent meaning of core and support activities, we can’t*
The following part of this case study will discuss the efforts made by the management in executing these activities in the organization.

4.5.5.1 Transformation Core Activities

The TKM team planned four projects related to core activities. They also formed sub teams to manage and execute these projects with the help of outside consultants and service providers. These projects were run in parallel. The details of each project are discussed in the following part of this case study.

4.5.5.1.1 ICT Infrastructure Development

The management decided to develop standardized ICT infrastructure keeping in view the future needs of this organization. The management also decided to implement integrated IS solution in the organization. The future IS systems demand standardized ICT infrastructure in the organization. It was not possible with the current IT manpower to implement such a huge ICT infrastructure i.e developing LAN as well as WAN in more than eight regions of Pakistan. The implementation and management of such a huge infrastructure was also a challenging task. The TKM team with the consent of IT team decided to outsource this project and after completing the tender formalities and requirements this project was finally awarded to one of the IT Companies in Pakistan.

The team responsible for development and implementation of ICT infrastructure was having more pressure as compared to other teams. Since the other projects were dependent on
availability of required ICT infrastructure. One of the members of this team said:

    We know the other projects were dependent on us; we have to complete our project and implement LAN as well as WAN even before dead line.

The ICT infrastructure was implemented by this team well in time. The ICT infrastructure was implemented having LAN as well as WAN in the organization. All the regions were connected through WAN with the head office. One of the senior managers said:

    It was a big achievement, our regional offices were connected through standard WAN, we were able to access and share information at the country level

The management was interested to have less dependency on outside consultants and planned to develop its own IT team to manage this infrastructure. The management also signed agreement with the service provider to provide desired IT training to the IT personal. The management also hired some new IT professionals with required IT skills and expertise and after two years the whole infrastructure was managed by the internal team of this organization.

4.5.5.1.2 Business Process Management

The TKM team developed sub teams to simplify and reengineer processes in the organization related to i) company registration related matters for the implementation of E-services project and ii) The process of HR and finance to implement ERP systems related to HR and Finance in the organization. The objective was to understand the deficiencies in the existing processes and procedures and after simplification and benchmarking the new processes would be redesigned. The strategy regarding process management was already chalked out by the management and discussed in 1.2.2 of this case study. These teams worked in collaboration with outside
consultants who were responsible for the development and implementation of E-services and implementation of ERP projects in the organization. One of the senior managers shared his thoughts and said:

*The teams working on process simplification and reengineering were working very hard. There were more than 100 activities involved in the process of company registration and evaluations and similarly the HR and Finance were also working in isolation... it was really a difficult task to integrate and automate such activities effectively*

These teams also got the benefit of KM activities introduced by TKM (support activities-discussed in the following section) department in the organization. The KM initiatives helped these teams to collect tacit as well as explicit information in effectively planning redesigning future processes of the organization. One of the members of these teams said:

*We took lot of benefit of KM activities introduced by TKM department. Tacit as well as explicit information was collected effectively in simplifying and redesigning existing processes in the organization*

These teams simplified and redesigned the processes with the help of outside consultants by considering their recommendations and consent of business process owners. These teams also considered the technical and human resource requirements while considering change in the processes. They recommended the change in processes along with the change in roles and responsibilities of the existing staff. They also highlighted the training needs of the existing staff and business process owners with the help of HR, IT and outside consultants. One of the senior officials said:
They helped us in proactively developing strategy regarding future training of our staff. They recommended changes in processes along with change in roles and training needs of individuals

4.5.5.1.3 Implementation of E-services and ERP system

The TKM team decided two important projects related to E-services and ERP implementation in the organization. The change in business processes related to these systems has already been discussed in this case. This part of case will discuss the efforts made regarding implementation of these projects.

The E-services project was based on IBM solution and automated the whole activity of company registration and its aligned matters. The importance of E-services project was published in one of the news letters of IBM (New Blue 2008):

“The Securities and Exchange Commission of Pakistan (SECP) has launched its e-Services based on IBM Software Solutions. This is the first of its kind of e-Services in the corporate history of Pakistan, which brings Pakistan at par with other advanced countries like USA, UK and Australia.”

The E-services project was successfully implemented by Techlogix, one of the IBM partners in the country. The E-services project provided E services to the management as well as customers of SECP. The benefits of E-services mentioned in different documents like newspapers, newsletters (SECP and IBM) and company presentations were concluded as under:

- Ensured seamless flow of business data on SECP business processes
- Ensured real-time monitoring through various data searching mechanisms
- Ensured security through digital certificates
- Ensured integration to SECP legacy applications, as well as integration with national social security databases and payment systems

The other important project was related to ERP implementation in the organization. The management decided to implement two modules related to HR and Finance were implemented. The TKM team worked with IT, HR and Finance team in identifying suitable solution for this purpose. The different companies gave presentations to the team regarding their ERP solution. Finally, they decided to implement oracle based solution and assigned this project to one of the companies after completing tender requirements.

Two modules related to HR (HRIS) and Finance were implemented by one of the companies. The processes related to these modules were already simplified and reengineered. The oracle based solution was successfully implemented. One of the IT officials said:

*The implementation of HRIS and FI was smooth and trouble free, we faced almost negligible problems during implementation of these modules........ Everything was proactively planned*

The support activities planned by TKM team were considered helpful in successfully implementing these systems in the organization. One of the senior managers expressed the benefits of support activities and said:

*The efforts regarding Training, IT governance and KM helped all the teams to work in their domain effectively and provided the necessary and timely support during important times*
4.5.5.2 Transformation support activities

In order to manage and sustain the process of transformation the KTM team planned support activities. These activities not only helped in successfully executing core activities but played critical role in managing and sustaining process of transformation in the organization.

4.5.5.2.1 Knowledge Management

The top management considered knowledge management initiative in the organization as one of the most vital and significant supportive activity of transformation process. One of the main objectives of the whole transformation initiative was to transform this organization into a knowledge based organization. The department of TKM took various initiatives to promote knowledge creation, knowledge sharing and knowledge applications in the organization. On the basis of interviews with the TKM team and informal discussions with other team members from different departments the following activities related to Knowledge management initiative were identified those were planned and implemented by TKM team.

4.5.5.2.1.1 Updating and sharing explicit information: The TKM team updated existing information available in documented form regarding customers and employees of this organization and shared through website and intranet with customers and employees of his organization. One of the members of TKM team said:

First, we want to update existing information available in documented form and sharing it with relevant parties. We ensure our customers and employees can access basic information in minimum time

The existing information related to customers like company registration procedure and other
relevant information was documented and shared through website of this organization. The information related to employees was documented and shared through intranet of the organization. The employees can easily search and access required information related to HR policies and financial matters and moreover, management ensured to provide correct and updated information. One of the junior members said:

*We were more satisfied after getting access to the information related to HR and finance. We can access through a single click which we cannot get even in weeks*

Similar comments of the members of help desk:

*We provided necessary information related to company registration etc. to the customers through website, now we have minimum enquiries about basic information.*

**4.5.2.1.2 Communicating and sharing Ideas through Portal:** The TKM team developed a portal to share ideas and identifying issues and problems in the organization. The employees were encouraged to share ideas if any related to transformation initiative in progress and any other issues if someone feel important in the organization. One of the senior managers said:

*We provided a place where employees can freely discuss and share matters they feel important, they were not only sharing issues and concerns but also giving some wonderful ideas to improve the current process*

The TKM team took such initiatives to encourage individuals to share their ideas and feelings in the organization without having any fear. The top management appreciated individuals on
sharing valuable information and thoughts through these applications. The top management took the bold initiative to encourage employees to share their ideas, thoughts and feelings openly and without any fear. One of the members of IT department said:

Our top management encouraged and appreciated even those individuals who identified and pointed management problems

4.5.5.2.1.3 Encouraging the use of Blogs: The TKM team encouraged the use of blogs to facilitate the process of transformation. The blogs of different teams working on transformation project were created to share and discuss important information. TKM team also arranged trainings for the employees and the senior management to effectively use blogs and social media in the organization. The TKM team provided facility through a portal to staff as well as senior management to develop blogs and also analyzed the data generated through these blogs. One of the managers discussed the benefits of this activity and said:

The use of blogs and social media helped us understanding issues and concerns and getting opinion from different members

4.5.5.2.1.4 Exit Interviews: The TKM team with the help of HR developed a strategy to capture information from the employees before leaving this organization. After receiving notice from the employee HR department planned interview at least one week before leaving the organization. The interview was formally conducted to identify reasons for leaving, issues and problems he/she faced and most importantly his/her recommendations for the management. Finally, report was submitted to the concerned department and the top management regarding problems, issues
and recommendations. One of the senior executive said:

We were able to capture valuable information which our employees can take away; this helped us in formulating our future strategy effectively in the organization.

The top management decided to adopt this practice even for employees working in the organization. They decided to conduct employee satisfaction analysis by getting feedback from employees related to different factors mentioned by the employees while leaving the organization.

4.5.2.1.5 Capturing tacit Knowledge: The TKM team also took the initiative of capturing valuable information from important employees in the organization. The application was developed to capture information from different employees and senior level management in the organization. The employees were asked to update information daily about the activities performed issues if any and how those issues were resolved. The information was stored in the database. The frequently asked questions were also developed from the information captured from the front desk and support staff. The benefits of capturing information were mentioned one of the managers as:

We were able to capture and store valuable information from employees and it helped in developing FAQ. It helped us in facilitating our customers.

The management also got the benefit of capturing tacit knowledge during important activity of BPR in the organization. One of the managers involved in the process of BPR activities said:
Capturing of tacit knowledge helped us during the BPR activities, we capture information about different processes from different process owners it helped us in effectively

4.5.5.2.1.6 Knowledge sharing culture: The efforts of TKM regarding knowledge management activities helped the management to effectively manage the process of transformation and further the importance and appreciation given to the individuals contributed in terms of sharing their ideas and concerns also helped in developing knowledge sharing culture in the organization. The employees were motivated to share their ideas and concerns and feel happy once they know they were the part of knowledge workers in the organization. The TKM team displayed a list of knowledge workers contributed in terms of sharing their thoughts and opinion and even those helped online in solving particular problem or issue. One of the team members shared his ideas and said:

*I was excited when I saw my name in the list of Knowledge workers, for me it was having worth of million dollars.....*

4.5.5.2.1.7 Benefits of KM practices: The management realized the benefits of introducing KM practices in the organization. The significance of KM realized by the top management and considered it an important activity like other main activities in the organization. The management decided to continue the practices of KM even after completion of transformation initiative in the organization. One of the senior managers said:

*KM practices helped us not only managing transformation initiative but its deep rooted benefits were identified even after completion of transformation process..... It has*
changed the approach of our employees, now their focus is not only performing some task but now they are thinking to introduce something new, the VAS [value added services] is the outcome of this activity

The benefits of KM were identified and discussed during informal discussion with one of the female executive and she said:

*Now our customers and employees have access to the information, they can access their desired information in minimum time and even they can share whatever they want. We are enjoying different culture after initiation of such activities[related to KM].*

The initiative of KM practices helped the top management to execute transformation initiative effectively and developed a supportive culture for this purpose. The TKM team also took some other initiatives like timely initiation change management activities in the organization. The following part of this case will reflect their efforts in this regard.

**4.5.5.3 Change Management Initiative**

The TKM team developed a change plan to proactively managing issues and concerns related to employees and customers in the organization. The following points were identified during interviews and informal discussions:

- TKM team with the consent of top management ensured participation of customers and employees during important times of transformation
- Effectively communicated the benefits of transformation to employs as well as customers through seminars arranged in different cities (Regional offices)
- Shared the transformation plan with the employees (all regions)
• Top management was involved in communicating and sharing benefits and future plans
• Developing trust of individuals and groups by giving due respect to their concerns and issues they raised
• The concerns and issues were documented and communicated to the top management for necessary remedial action
• Ensured to communicate the outcome positive as well as negative to the individual or groups
• Arranged informal meetings and family trips to develop cordial relationship
• Celebrated and communicated even small achievements
• Launched official newsletter to share and communicate top management vision and future plan and keep everyone aware of the activities happening in the organization

Such change management activities helped the top management in successfully managing transformation initiative in the organization. The management has faced minimum resistance from employees’ due to timely execution of such activities. One of the top officials said:

_Thanks to TKM team, we faced minimum issues related to people, we enjoyed whole journey smoothly due to their proactive approach_

### 4.5.4.4 IT Governance

The TKM team gave special attention to IT governance activities and considered this activity important for successfully implementing and sustaining ICT related change in the organization. One of the senior officials of TKM said:

_Since we were heading towards major change through ICT, we have to define_
governance strategy explicitly in order to manage issues later on [regrading outside consultants and service providers]

Similar comments of another IT official:

To manage and sustain ICT enabled change you have to clearly define governance, who can initiate any change in process or technology and who is responsible for what

The IT governance efforts helped the management to successfully deal matters with the consultants and service providers. The roles and responsibilities were clearly defined and agreed by all the parties. The mechanism related to initiating any change in process or technology also clearly defined in order to avoid problems in the future.

4.5.5.5 Changing Environment

The TKM team also made efforts in developing soft image of this organization. They considered change in work environment as a necessary activity in order to develop favorable perception in the minds of individuals. One of the members of TKM team said:

Transformation based on fundamental changes in process, technology and people mind set is a long journey, you have to show some low hanging fruits. People can’t wait for a long time. Some minor changes sometime set the path for larger progression

Similar comments of another senior official:

Now you can feel the change by looking at our stationery, office furniture, layout and most importantly the cleanliness. Now we feel we are working in a different environment.

The aspects related to environmental change have significantly changed the perception of
employees and customers. Now they feel some positive change. The efforts made by the management regarding developing soft image, change in stationery and logo, changing physical layout of offices, ensuring cleanliness, providing neat and clean environment helped and facilitated the complex initiative of introducing fundamental changes in the organization.

4.5.6 Transformation Results/Achievements

The top management of SECP has been successful in achieving their transformation objectives. They took the challenge of transforming this organization into a knowledge based organization and finally they were able to develop culture where people can freely share their ideas and information. The top management was able to manage the problems of inefficiency in the process by offering E-services and implementation of ERP systems in the organization. The implementation of ICT infrastructure helped the top management to share information with remote offices in different regions and monitor their progress effectively. The customers having access to information and the process of company registration has been simplified. Now they are getting on line services of international standard.

The achievements related to transformation initiative published in newspapers and mentioned in the official documents of SECP were mainly encompassed:

- Secured prominent distinctions like the Sword of Cyber Defense, top 5 website ranking, first RAC installation on developing top of the line information systems in SECP
- Won Laureate Gold Medal on promoting positive social, economic and educational change after being evaluated among more than 1,000 nominations from across the world by International Data Group, the world’s leading technology media, events and research
company

- First regulator in Pakistan to achieve ISO 27001 information security certification for its implementations in the design, development and implementation of IT solutions and services for the SECP.
- According to the World Bank Report on ease of doing business in countries across the world, the ranking of Pakistan vis-a-vis ease of starting business was improved from 89 to 68 after launching E-services
- The management of SECP was requested by various organizations to provide them technical advice and support in formulating their transformation strategies

4.5.7 Summary

This chapter presented the conduct of four case studies carried out in public and private sector organizations to understand the phenomena of organizational transformation. Each case study provided the detail for initiating organizational transformation process, its objectives and the reasons explaining why it had been adopted by the specific organization.

The process of organizational transformation is investigated rigorously for each case under study. The strategy developed by the top management regarding planning, implementing and sustaining the transformation initiative has been described in its context for each case separately. The case studies reflected how the organizations were transformed, what sort of challenges were faced by each organization and remedial measure taken so far to address the issues. Any commonalities and differences among issues faced by each organization are also described and
those may help in analyzing them in their context. The strategy concerns regarding people, process and technology are also highlighted in this chapter. Furthermore, the transformation process for each case is rigorously delineated which further helped the researcher in understanding the complex phenomena of transformation. This chapter also explained the remedial measures carried out in each individual case to address the issues and challenges regarding technology and people aspects. Furthermore, other factors which have contributed for this transformation process to be smooth were also explored and explained. The analysis and explanation of the findings, its relevance with the previous research and new facts explored are presented in the next chapter-5.
CHAPTER 5: FINDINGS/DISCUSSION

5.1 INTRODUCTION

This chapter presents the findings and discussion after rigorous analysis of case studies carried out in previous chapter. The findings and discussion of each case is explained in detail separately. Furthermore, an integrated discussion about the cases discussed so far is also provided that may lead to the framework proposed for the organizations looking for to be transformed. The framework encompasses the potential means and enablers those required to be considered for purposeful outcome of the transformation. This chapter highlights the major contribution of this research.

5.2 FINDINGS/ DISCUSSION OF CASE STUDY A

This part of discussion highlights the strenuous efforts made to transform the company A. The top management realized the dire need of transformation due to different issues and challenges already discussed in the case study. The management observed the inefficiency in work processes and lack of standardized practices needed at the global level to achieve competitive edge. Finally, the management decided to introduce radical changes necessary for the purpose. The focus of the management was to introduce major changes in work processes and IT infrastructure at the global level. Such change may be referred to as second order change as described in the literature (Levy and Merry, 1986; Rouse, 2005).

The social and technical aspects were given due importance throughout the transformation journey of this organization. The balanced approach maintained to deal with social and technical aspects was one of the success factors of this transformation. Adoption of socio-technical
approach has been suggested by different researchers in implementing ICT enabled transformation in organization (Nair et al., 2014; Chen & Nath, 2008).

The futuristic vision, consistent support and active involvement of top management were found as one of the important part of strategy of management. The importance given to people, process and technological aspects played a major role in achieving the benefits expected from such transformation initiative.

The GIP initiative of this company indicated the planned approach adopted by the management regarding people, process and technology. The flavor of such approach is visible in programs P-I, P-II and P-III implemented to lead the transformation project. The top management put tremendous efforts in understanding the nature and severity of existing issues related to people, process and technology. Consequently, it helped top management in developing an effective strategy to lead the transformation project. The findings reflect that futuristic approach of top management to handle the matters of people, process and technology helped in proactively managing issues and challenges surfaced during the transformation process.

The management decision to develop transformation strategy by aligning people, process and technology appeared as a silver bullet to couple with such complex process of organizational transformation. The awareness about the potential issues and challenges that may occur and to handle them proactively the management adopted conscious approach to proceed with the transformation initiative (see Anderson and Anderson, 2001). It was found that conscious transformation approach thus adopted helped in proactively managing socio-technical issues of transformation intelligently.
The top management seems to be interested in evolving a cost efficient strategy and providing quality of service to the main stakeholders leading to effectiveness and efficiency of the organization. In support of this one of the top executive said:

*Our focus was doing the right things at a right time in a right way.*

The strategy of the top management to provide constant support encouraging participation of the employee, collaboration of HR, IT and business process owner seems to be very effective.

The main need of organizational transformation of this company was to improve work processes getting optimum benefit of the state of art technology and exploitation of human resources to achieve efficiency to become a leading company.

The participation and collaboration of HR, IT and business process owners during transformation process led to achieving effectiveness as well as efficiency by integrating and aligning process, technology and people skills. Participation of HR, IT in important decisions during important decisions of transformation facilitate whereas ignoring or giving less importance to HR and IT may result in failure of transformation initiatives (Galliers & Leidner, 2007; Roberts, 2014).

The participation and collaboration of HR, IT and “Dream Team”, led to anticipating future requirements and challenges related to people, process and technology and assisted in developing proactive strategy to address socio-technical problems and issues successfully. Moreover, planning of technical and human resource requirements to meet the future business needs proved itself as a best strategic decision that was part of strategy developed.

The company may have expected resistance from employees while adopting a new technology that is (ICT, ERP systems etc.) or introducing any fundamental changes in the organization. However, it faced minimum resistance and enjoyed maximum support from people because of managing such change keeping in view socio-technical perspective. The steps taken so far to
manage such a radical change have already been explained in the case study. The change management is critical for managing transformation. Planning for change management prior to implementing any technology enabled change in the organization as advocated by researchers (Ash & Burn, 2003; Boersma & Kingma, 2005; Roberts 2014).

Top management remained actively engaged in the change management activities and facilitated in creating a supportive environment for transformation free of irritants. The ICM team effectively communicated future vision and need of transformation through a quality leadership. The leadership and ICM team’s vision and strategy helped a lot in acquiring cooperation and support from employees engaged in transformational process.

Encouraging participation and effective communication among employees also appeared very fruitful in sharing ideas, experiences and most importantly understanding concerns of both individuals and groups. Moreover, it led to developing good rapport among the stakeholders involved. The issues and concerns of individuals and groups were documented and forwarded to the management. Consequently, it helped management to develop proactive remedial measures to address those in due course of time. The findings reflect that proactive strategy helped to address the concerns of individuals and groups timely that ultimately resulted in reducing the problems. The management encouraged the individual and groups to share their ideas and concerns openly in the organization.

This research also identified the role of coaching and training in effectively managing the concerns and challenges related to career growth and development of employees in the organization. The training (i.e. one way) approach was used to develop the technical skills related to SAP and coaching (two way) helped to convey them change in their potential roles and responsibilities to be entrusted in future. This dual approach was very effective in developing
technical skills and fostering understanding about their future roles and responsibilities and significant change in their perception about transformation. The leadership and management training conducted also helped in changing mindset of the people and effectively developed skills of the participants to analyze and solve problems proactively in the organization.

Motivational techniques of ICM team assisted in motivating employees and their families and consequently developed a favorable environment in the organization. The strategy to provide health, education and providing food related items on discount rates appeared as helpful in developing sentimental attachment of employees with the company. One of the important outcomes of change management activities throughout the transformation process helped in developing trust of people on transformation and acceptance towards new processes and technology.

The important role of Knowledge management was also identified in this research. The importance given to change management and knowledge management activities at the outset of transformation helped in introducing fundamental changes related to people, process and technology in the organization.

The story telling (one of the tools of KM) has been used in communicating individual and organizational benefits seems to be effective in changing perceptions of individuals and groups. The importance given to knowledge sharing and knowledge management has been reflected in the activities of dream team. This team captured tacit knowledge of experienced employees while standardizing processes seems beneficial in identifying issues in the current processes and helpful in formulating strategy for future processes.
The management efforts to document the lessons learned also helped in successfully implementing ERP systems in different countries of the world. The issues and challenges faced in one country were documented and shared with the members of other country appeared helpful in avoiding reoccurrence of such problems and issues. This case study highlighted the use of personalization and codification approach (see Hansen et al., 1999) by the management of Company A. The dream team used personalization approach in learning and identifying issues and problems in the existing business processes and similarly codification approach was adopted to share the lesson learned with the members of different teams appeared very fruitful in proactively addressing issues and concerns of transformation. The effective use of these two approaches played an important role in the success of transformation. Murray and Greenes (2006) also emphasized the critical role of knowledge sharing and knowledge management activities in successfully building enterprise of the future has been further verified through this case study.

The role of community of practice (COP), blogs and intranet in successfully executing transformation activities has been identified. These tools were effectively used to share valuable information at the global level. The employees from different countries and regions were able to remotely share valuable information and get benefit of each other’s experience and knowledge. The use of knowledge management tools and application has also been identified in developing good relations with the new vendors. The knowledge sharing and knowledge transfer activities with vendors helped in reducing concerns of individuals and groups about outsourcing of IT activities in the organization. The appreciation of the top management by displaying a list of knowledge contributors encouraged knowledge sharing and knowledge management practices and it further facilitated the process of transformation at the global level.
The efforts of the management to develop learning environment has been reflected in the case study and their efforts to unlearn seems to be equally effective in developing favorable attitude towards adoption and acceptance of new process and technology of different employees.

This research study inferred that process standardization activities carried out in the organization implicitly fall under the concept of business process management (BPM). BPM entails integrating processes, humans and IT and advocate a more formal management of the organization's business processes. This aspect appeared as one of the enabling element for organizational transformation. The approach adopted by the management to standardize process at the global level seems successful. The management efforts to identify and select process owners from different regions on the basis of their experience and most importantly their knowledge sharing attitude helped the overall process of transformation. The management gave importance to subject matter experts (SMEs) and upgraded their role after some time to super users. Finally selecting them for the stabilization team played a significant role in implementing and sustaining transformation activities in the organization.

The participative and collaborative approach adopted during process standardization helped in proactively identifying issues, concerns and challenges related to potential means i.e. people, process and technology. The participation of HR and IT during process standardization activities appeared as one of the futuristic approach to successfully align people, process and technology. Their collaborative efforts to identify change in role, responsibilities, structures and future training needs of individual were found beneficial in implementing and sustaining transformation activities in the organization. The management was able to proactively develop training program
for the employees and identified the technical requirements for integration of processes and technology in the organization. It seems that the top management was aware of the potential issues and challenges of BPR identified in the past research (see Al-khouri, 2010; Peppard and Ward, 2004; Almarshari and Zairi, 1999) and adopted proactive strategy by involving HR and IT and benefited in designing proactive strategy to resolve technical as well as social problems of this IT enabled change.

This research also identified the important role of ICT governance in managing, implementing and sustaining ICT enabled organizational transformation. The policies developed by ICM team regarding process, people, technology and information seems to play an effective role in successfully executing and managing transformation activities in the organization. It may be speculated that the issues and challenges related to people, process and technology were proactively managed and minimized due to IT governance initiative of this company. The adoption of ITIL framework also seems to be effective in managing issues with vendors and service providers at the global level. Past research also highlighted the important role of ICT governance in successfully managing major change activities in the organization (see Blumberg, et al., 2014; Lacity et al., 2009). This research found that preparation of comprehensive agreements like service level agreements (SLAs) and clearly defining the roles and responsibilities of service providers may manage the post transformation issues successfully in the organization. As for as findings are concerned the following are worth highlighting:

- Adopted Socio-technical approach
- Proactive strategy for people, process and technology
- Ensured participation of main stakeholders
• Participative decision making
• Effective use of KM tools
• Initiating change management activities at the outset of project
• Effectively planned and implemented BPM activities
• Encouraged effective communication within and across the departments
• Effective role of training and coaching
• Importance given to IT governance
5.3 FINDINGS AND DISCUSSION OF CASE STUDY B

The findings of this case study highlight the transformation initiative of a public sector organization operating in Pakistan. The top management of this directorate took the bold decision to introduce major changes related to people, process and technology in addition to working environment of this organization to address the problems such as lack of efficient work processes, transparency, security, compliance with the international standards regarding issuance of passport. Such decision of the management for a radical change may be taken as a second order change or may be termed as organizational transformation (Levy and Merry, 1986; Rouse, 2005).

The management took the initiative of transformation to enhance efficiency as well as effectiveness in the organization. The changes needed were not of routine nature but revolutionary. The approach adopted to address the challenges being faced was revolutionary (see Venktraman, 1994) and the changes being introduced were more than gradual changes. The major changes relating to people, process, working environment and technology were major ones that ultimately transformed operational activities of the organization.

The participation of the stakeholders involved was encouraged by the top management and their feedback was also appreciated. Participative approach adopted by the organization added a lot in developing effective organizational transformation strategy to bring out such a major change in the organization.

The selection of members from HR, Finance and IT department to constitute a team responsible for carrying out such change appeared as a better decision that finally ensured participation on
the part of stakeholders in the transformation process. The team provided necessary information about the technical, financial and human resource requirements in feasibility and further identified most critical issues and problems in the current system. Consequently, it helped top management in addressing such issues in the current system and effectively planned for its remedial measures through transformation of organization. Prior to introducing a fundamental change in any organization, the understanding of current issues and problems always helpful in framing effective future strategy has been suggested in past research as strategic decision (Moreton, 1995; Orlikoski, 1996; Rouse, 2011; Sharma et al, 2011). The issue identified so far guided top management to concentrate not only just planning IT strategy but demanded more efforts regarding social and behavioral aspects as well. The approach adopted to explore, understand and finally sharing issues and problems with stakeholders helped in creating awareness and need of transformation among the employees and to further prepare them to accept change for acquiring the potential benefits expected.

The decision of the top management to outsource this project to NADRA appeared as a healthy sign. The transformation roadmap developed by the teams by consensus appeared very effective in proactively managing issues and problems about people, process and technological aspects in the organization. Dealing with social issues prominently in addition to technical one on adoption of technology, inviting change in work process is suggested in past research for change initiative to be taken effectively in public sector organizations (see Ngrasek and Vintar, 2014; Orlikowski, and Yates, 2006). The transformation roadmap developed to cope with social as well as technical aspects followed “socio-technical” approach as discussed by Bostrom and Heinen (1977). The future transformational activities—planned about people, process, technology and creating conducive and encouraging working environment added values in implementing
potential changes in its true spirit. It seems they were fully aware of the current as well as future situation and developed planned efforts for people, process and technology and this may be due to the experience of implementing similar project at national level. The importance of socio-technical approach in developing effective transformation strategy was also highlighted in the past research (see Chen and Nath, 2008; Nair et al, 2014).

The effective communication and collaboration among the two teams was also highlighted as one of the important strategies developed by these two teams. The ownership of this project among the two teams was also very high and both the teams having win-win situation. It was due to the efforts made by the top management in communicating this aspect effectively to both of these teams. This reflects the support and involvement of top management in the project. Philip and McKeown (2003) also identified the need of effective communication strategy in developing supportive environment for transformation. They further emphasized that everyone must be communicated the benefits he/she will have from this project. One of the failure reasons identified by Kotter (1995) is lack of effective communication among the stakeholders involved in the process of transformation. Similarly Nograsek and Vintar(2104) identified one of the issues in public sector organization was lack of coordination and communication among teams working on transformation projects.

The management was able to get the benefits of the lessons learned by NADRA. The sharing of success stories of NADRA with the employees of this directorate was effective in developing motivation and favorable attitude of employees. It was identified as one of the effective change management strategy of this management which helped in reducing lot of resistance of employees. Nonaka et al., (2014) considered the need of sharing information with the employees
as a pre-requisite at the outset of transformation process; consequently, it might help in their supportive attitude and active involvement in the transformation process.

One of the highlights of this case study is the identification of unique approach developed by this team regarding training activities in the organization. The training was effectively planned keeping in view the current and future needs of the organization and this team also tried to solve the problems and issues identified related to employees and customers. The basic IT training helped in developing IT skills in the staff and moreover customer care training and workshops also helped in developing awareness about this important aspect which was neglected in the past. The involvement and active participation of senior management in training activities also motivated the employees. The training programs also helped in developing technical as well managerial skills thought necessary for implementing transformation activities in the organization. The training programs and workshops about change management and project management not only helped in developing an understanding about these important aspects but also implemented these practices in the transformation process. The development and introduction of change management practices in the organization was also identified an important outcome of these trainings. Cha et al. (2015) also mentioned the important and critical role of developing technical as well as managerial capabilities in team in order to successfully implement IT enabled transformation. Shah et al. (2011) identified lack of project management practices in public sector organizations of Pakistan. Similarly, other authors also identified less importance given to such activities in developing countries (Heeks, 2002; Almarshari et al., 2003; Baba, 2001). The project management trainings held by these teams helped in developing awareness about this important aspect and also in implementation of project management practices during the transformation process.
The case study findings further reveal the success of business process reengineering activities in the organization. Past research considered BPR activities as a challenging task particularly in public sector organizations (Hammer, 1990). However, it was found that management made this complex activity simple by adopting participative and collaborative approach. The integration of different processes also helped in developing a viable and effective solution for MRP. The efforts regarding governance of such processes seem more helpful in successfully implementing and sustaining such change in the organization. Past research considered lack of governance as one of the barriers of successfully implementing and sustaining technology enabled change in the public sector organizations (Kim et al., 2007; Irani et al., 2007). Moreover, the efforts regarding identification of change in roles and responsibilities of different users also helped in proactively developing effective training and development needs of the employees. The change in roles and responsibilities was communicated to the relevant persons and they were provided effective training regarding their future roles. This approach of management also helped in minimizing resistance of employees and effectively addressed their concerns and apprehensions about their career. It eventually led to acceptance of desired change.

It was found that importance given to information management and information sharing activities helped in successfully executing transformation initiative in the organization. Xu et al., (2006) also identified the significant role of information sharing and information management during major change activities in the organization. The efforts of teams regarding identification of issues and problems used different management techniques. They captured information from employees and customers regarding their experience about existing processes such efforts reflect that management was interested in capturing tacit knowledge of employees and customers. The issues identified were documented and shared with the management and employees of this
organization. The management also took the important decision of sharing information with the customers and effectively used different means like information desk, online passport tracking system, online complaint management system in addition to displaying relevant information through charts to facilitate customers. One of the important outcomes of such activities resulted in reducing corruption and improved transparency in the organization.

The management continued this practice of information sharing and information management even after implementation of transformation activities in RPOs. The practices like documenting and sharing lessons learnt also helped in successfully implementing MRP systems at the national and international level. The feedback system developed was also very effective in identifying issues and problems in the system and it helped in developing and implementing value added services to facilitate its customers. Such activities and practices reflect that management was encouraging innovative solutions and exploiting the use of information very effectively. The management was finally able in developing a knowledge sharing culture in the organization.

The management efforts regarding change in work place environment also helped in developing positive perceptions of employees and customers of this organization. The management not only made untiring efforts about change in processes and adoptions of technology but also significant efforts were introduced regarding change in working environment in the organization. The employees and customers felt and realized the impact of changes early which was not possible through technical or process level changes. The findings of this study are in consistent with the previous research regarding impact of change in work place environment during IT enabled change (Nograšek, & Vintar, 2014; 1994; Cha et al., 2015).
The findings of this research reflect that the management was able to successfully implement fundamental changes in process, technology and people’s mindset along with significant changes in work place environment. The results and outcome discussed in the case reflect the significant improvement in performance and efficiency and most importantly the issues and challenges those were discussed in the case were managed effectively through this initiative. The findings may be summarized as the success of IT enabled change in the organization was due to consideration given to the following important aspects:

- Top management commitment and support
- Adoption of revolutionary approach
- Addressing socio-technical aspects
- Collaboration and effective communication among the stakeholders
- Knowledge sharing practices
- Technical and managerial trainings
- Effective change management strategies
- Communicating benefits to the stakeholders
- Sharing success stories of similar transformation
- Encouraging participation and feedback from employee and customers

and Creating conducive working environment in the organization.
5.4 FINDINGS/DISCUSSION OF CASE STUDY C

The findings of this case study reflect the transformational efforts of one of the companies responsible for exploration of oil and gas in Pakistan. The management realized the dire need of adoption of major changes in work processes and adoption of IT to address the internal as well external challenges discussed earlier in the case study. The decision of the management to assign this task to finance department found to be improper decision in long run. It was further revealed that the top management did not preferred participation of different stakeholders in deciding about transformation initiative but just consulted with finance department. It resulted in lack of ownership on the part of employees of other departments. The perception of employees regarding transformation initiative did not look to be very positive. They were treating this project as department level activity rather an organizational level initiative. Whereas, the organizational transformation initiative is an organizational level activity as it addresses fundamental changes in people, process and technology aspects in the organization. So the participation of stakeholders in launching such project is considered always beneficial (see Roberts, 2104).

The transformation strategy of this company looks to be not very convincing. It addressed only two aspects i.e. changing work processes and technology. The third major aspect related to people was fully ignored. The transformation plan included redesigning of work processes, development of ICT infrastructure and implementation of ERP systems. The strategy looks to be more or less technology driven. Past research considered such strategies suitable only for incremental changes not for transformation (Hughes, 2015; Ash and Burn, 2003; Hall, 2002).
Further the approach adopted to deal with such changes was evolutionary rather revolutionary (see Venktraman, 1994). It seems that management was trying to solve the issues and problems through transformation but adopted evolutionary approach, an approach more suitable to address small changes in the organization than big changes as were intended by this organization.

It was further found that the management focused only on technical dimension and ignored the socio dimension of this important change. Such practice was common in organizations three decades ago as mentioned in the literature review. It was surprisingly thought that the management of this organization almost totally ignored the people part whereas social dimension has been well recognized to be considered during IS implementation in the organization (Bostrom and Heinen, 1977). Past research also emphasized to consider socio-technical approach for effectively managing the process of organizational transformation (Owden, 1999; Mathrani, 2010).

Moreover, transformation strategy was not properly formulated by the top management. Consciously or unconsciously top management adopted reactive approach to solve issues and problems as and when needed. It seems that management was not fully aware of the issues and challenges of this project prior to its initiation and even management did not make any efforts to explore those seriously. However, it might be the first experience of the organization to launch and handle such a complex project. It seems that the management did not try to educate itself regarding understanding this phenomenon and started this journey without knowing much about its complexity contrarily. Anderson and Anderson (2001) suggested conscious approach to be followed regarding such transformation to address issues and challenges proactively.
The management also neglected involvement of HR members when it took decision of transformational change thus it resulted in terms of plenty of socio and technical problems later on. Consequently, this situation badly hampered the process of transformation. The involvement of HR members in strategic decision making has been emphasized in the cases relevant to organizational transformation (Tichy, 1983). Such practice was not common before 1980’s however its potential benefits were realized later on. It was found that training programs offered in the organization was not scheduled timely consequently there was lack of trained manpower to run ERP systems smoothly. Although trainings were offered after implementation of ERP however the outcome was not satisfactory. The organization faced this problem because of non-involvement of HR at important times and late decision to provide training of potential users. The management faced the issue of availability of trained work workforce after implementation of ERP systems. The departments other than finance were not using ERP systems because of this issue. Employees in the organization thought about information systems in their own way and the expected benefits were not communicated to the employees at the outset of project. The employees other than finance department have not perceived the importance of this valuable change and were reluctant to use the system. Thus, one of the causes of failure may be lack of training at proper time.

The importance of change management was not fully realized and no planned efforts regarding change management were made by the top management. It reflects the change management aspect was not included in the strategy developed by the management for transformation. Due to such issues in strategy, people were not communicated the benefits of transformation. Moreover, issues and problems in the old system were not communicated and addressed. Their doubts and concerns about the new systems were never addressed and half heartedly fewer efforts were
made by the management in identifying issues and problems. Consequently, users preferred use of old system except finance department. The researchers were of the point of view that in order to manage change effectively the employees of the organization must be communicated the benefits of the new system and drawbacks in the old system to develop their positive attitude towards change (Hanna, 2010; Iveroth, 2011).

In order to implement the strategy regarding business process redesign the major problems faced by the team members was non availability of documentation related to work processes being practiced in the organization. The problem accelerated in such a manner that the team faced severe difficulties in understanding the nature and design of the work flows within and among the departments. Moreover, noncooperation of employees regarding sharing of information about work processes also aggravated the problem. It reflects there was a lack of information sharing culture in the organization. This team made lot of efforts and finally redesigned the processes on the basis of best practices and future needs. The response of different departments was not encouraging. Even after signing off redesigned process the departments were reluctant to accept the recommendations of BPR team. The staff members showed lot of resistance except the members of finance department who were involved from the first day and realized the significance of BPR. Because of involvement in the project at the outset they were more receptive about such initiatives whereas the other departments considered it a layoff strategy. Moreover, the union and some other pressure groups communicated negative aspects to different employees which caused lot of problems for the management. The need of communicating benefits of BPR to the potential users and addressing the concerns of individuals and groups in the organization has already been pointed out in the past research (see Almashari et al., 2001; Hammer, 1990). Putting in nutshell the management did not develop any strategy and make
notable efforts to communicate the benefits of BPR necessary to adopt ERP systems to different employees at the organizational level. The “propaganda” of union and other pressure groups created negative atmosphere on communicating the dark side of BPR activities and succeeded in developing wrong perception of employees about this important activity. The groups extended the pressure on the top management through unethical moves and tactics and consequently it forced the management to revert its decision and finally seized BPR initiative. Top management unawareness about future benefits and importance of BPR in the transformation process led them to stop it rather than convincing the union and other groups whereas, the significance of BPR and its potential role in the overall transformation process is critical as explained in the literature (Hall, 2002; Almashari et al., 2001, Hammer and Champy, 1993). The stop over decision made by the management badly affected the whole process of transformation. The ERP systems were implemented with maximum customization without adopting best practices and transforming inefficient processes, such implementation of ERP can be taken as simply as automation rather than transformation (Venktraman, 1994; Ash and Burn, 2003). Thus, despite investing a lot of financial resources on this project the expected benefits could not be achieved. Moreover, organization faced lot of socio-technical issues and challenges as identified in the case study.

Later on, the newly appointed chairman having IT exposure and background put tremendous efforts to address such problems and issues. He realized the need of a viable IT department and later it was established in the organization. Such strategic decision by the leadership appeared to be effective in developing long term IT policy for this organization reflecting futuristic approach adopted by the management. The development of proper IT policy and its contents discussed in the case reflect the futuristic approach of top management. The new IT governance plan was found effective in managing ICT infrastructure and related applications effectively.
Moreover, establishment of a training department was also a visionary decision. The training department offered basic IT and ERP training to staff and senior officials concerned. The efforts regarding ERP training however, did not produce expected results because the management was unable to change the mindset of employees to accept the change. It was noted that lack of proper strategy, non-involvement of HR department and non-existence of IT department appeared as major deficiencies unfortunately not addressed at the outset of the project.

The case study findings reflect the transformation initiative of this organization was partially successful. The management was able to introduce some change in the department level but unable to introduce any major change at the organizational level. The recommendations made by the IT department regarding re-implementation of ERP after reviewing the current ERP systems reflect the issues and problems in strategy and approach followed for transformational change. The findings reflect that the organization faced more cultural and social problems rather than technical. Most of the failures in IS implementation were due to social problems as identified in IS research four decades ago. However, such situation still persists. Thus, organizations must learn lessons from such failures. It is suggested that ERP systems which are socio-technical in nature should be implemented keeping in view their socio-technical perspective rather than technical alone. Furthermore, the transformation of organization on adopting ERP and ICT never be taken as technical change only but a three-pronged activity consisting of cultural, social and technical dimensions.

In conclusion, the transformation of Company C ended in disappointing status as the organization was unable to achieve its intended goals despite huge investments. The new
management finally took the bold decision of re-implementing ERP systems after discussion with relevant stakeholders and lessons learned from the past failures.

5.5 FINDINGS/DISCUSSION OF CASE STUDY D

The analysis led to the findings that the top management made marvelous efforts to transform traditional organization into knowledge based organization successfully. Zack (2003) mentioned the characteristics of knowledge based organization and recommended some guidelines for transforming organization into knowledge based organization. The management adopted similar approach as recommended by Zack to proceed with transformation planned and ultimately management succeeded in achieving the intended goals. Drucker (1988) envisioned the need of information based organizations in order to effectively manage the issues and challenges of the 21st century.

The efforts of the management regarding understanding problems and issues through external consultants were found effective and helpful in identifying core issues related to people, process, information and IT. The role of consultants seems to be very productive and the solution proposed by them facilitated the management in developing a viable future strategy. The involvement of consultants in identifying issues and problems is a common practice and it has been valued by researchers of organizational development (see Cummings and Worley, 2008; French et al., 1999).

The top management made a decision to introduce major changes in procedures and working environment through adopting ICT systems. Consequently, these may affect people, process and technological aspects so the management decided to communicate their decision to the employees through different means such as newsletter, seminars, workshops, formal and
informal meetings etc. at the outset of this project. Ultimately it helped to build the trust of employees and mitigating the fear of such big change coming forth in the organization. Such sort of initiative may be termed as “transformation” rather than a simple change in any organization (see Venktraman, 1994; Rouse, 2005). Secondly, communicating the purpose and goals of the potential change prior to introducing change resulted in encouragement and motivation of employees ultimately leading to acceptance of such initiative. The management further decided to establish a “Department of Transformation and Knowledge Management” (TKM) responsible for planning, designing and implementing tasks related to transforming the organization. Moreover, the management efforts and approach regarding team formation and selection criteria of the members were also found very effective. The decision of the management to hire CTO was found very valuable and strategic as it played a vital role in transforming this organization into knowledge based organization. The need of dedicated department and professionals like CKO (chief knowledge officer) and CTO (Chief transformation officer) for effectively managing knowledge and executing transformation activities in the organizations has been recognized as encouraging sign (Noanaka and Takeuchi, 1995; Davenport and Prusak 1998). To carry out such transformation process, the management followed a “conscious approach” which is supposed to be proactive in nature. The term “approach” to transformation means “state of awareness that leaders personally bring to transformation and that influences the actions they take” (Anderson and Anderson, 2001, p. 52). The involvement of external consultant, CTO and other senior staff reflects that the organization proceeded with a “planned change”. That refers to how experts inside and outside the organization help in coping with the difficulties that may arise and to plan and implement change (Levy and Mery, 1986). The management seemed to be aware of the complexities of such transformation initiative so it was well prepared prior to its implementation.
The responsibilities assigned to KTM department further reflect the “holistic view” (see Nightingale and Srinivasan, 2011) of the top management to lead the transformation process in a well-managed way. The approach followed by the organization to assign responsibilities and tasks to KTM department comply with guidelines suggested in the literature that may lead to success eventually (Nightingale and Srinivasan, 2011).

The effective role played by TKM department in bridging the gap between IT and business process owners were apparent. The TKM members were having expertise of IT as well as business process. They effectively managed the communication between IT and business process owners. Past research highlighted the importance of effective communication among IT and business process owners in order to effectively develop and implement IS based solutions in the organization (Pan et al., 2006; Hall, 2002).

The management considered people, process and technology as integrated elements of their transformation strategy. Such decision of the management contributed a lot for the transformation process to be smooth and successful. The social and technical aspects were given equal importance as reflected in the transformation strategy and programs. Keeping in view the technical and behavioral nature of the organization the past research recommended to consider both social as well as technical aspects in planning, executing and implementing such a challenging transformation initiative in the organization (Owden, 1999; Pan et al., 2007). The strategy developed about socio-technical aspects as explored in this study enhanced our understanding about its significance and importance in managing transformation process. The case study findings further revealed that plan of transformation was divided to carry out “core” and “supporting” activities in parallel. Such decision resulted in managing the issues and
problems efficiently by the management. The need to develop a joint strategy regarding people, process, and technology has been advocated in the past research for a better outcome (Land, 1998). The transformation strategy reflects the planned approach regarding support activities like change management, knowledge management and IT governance. The management gave due importance to such activities in parallel to core activities of transformation. It seems that past experience of CTO also helped in formulating such planned strategy in the organization.

The decision of the management to outsource IT infrastructure development and implementation also helped in redefining the role of IT in the organization. The capabilities of the IT team were developed regarding governance of IT related tasks in the organization and they were encouraged to work in collaboration with other business process owners in providing effective services to customers. Rockart et al., (1996) also stressed the need of redefining the role of IT in the organization by changing their role from troubleshooting to technology anticipation and more importantly the governance of IT related tasks in the organization. The recommendations made by Rockart et al. (1996) were reflected in the transformation programs developed by KTM team. The management decision to develop IT capabilities and expertise of their IT team with an intention to manage the IT infrastructure by their own team reflects the management intentions to be self-sufficient in managing their IT infrastructure and tasks by themselves. This may be due to the general perception in the public sector to manage infrastructure through own team for security and data protection. Thus, management was successful in their plan and after two years they were able to manage such infrastructure through their own team. Although they are managing this infrastructure through their own team but still some employees expressed concern about the decline in quality of service regarding IT in the organization. The management was also aware about these concerns and their future plans regarding acquisition of cloud based
services reflect the intention of management to outsource such activities again.

The supporting role of knowledge management activities like capturing tacit knowledge of employees about business processes led to redesigning and simplifying the processes. The management was finally able in simplifying the processes through BPR and planned the future processes by eliminating the deficiencies and problems. The significant role of knowledge management is well recognized regarding BPR and implementation of major change initiatives related to IS (Chen and Nath, 2008; 2001; Alavi and Leidner; 1999). The importance given to people aspect while considering change in processes helped in proactively developing training and counseling programs for the employees as well as senior officials. The outcome of such activity appeared as in terms of skilled and motivated workforce capable enough to handle organizational task in future. As per plan the ERP systems were successfully implemented. The management support and training of the employees helped a lot to avoid any resistance on the part of users. The implementation of such systems mitigated the issues and problems with legacy systems. The implementation of HRIS has helped the management in effectively managing critical issues about HR in the organization.

The decision of the management to share explicit as well as tacit information also helped in reducing lot of concerns of the employees as well as customers. The provision of correct and updated information regarding HR policies also helped in developing trust of employees on the system as well as on the organization. The top management decision to introduce major reforms in HR by developing employee friendly HR policy also helped in motivating existing employees and attracting professionals from the industry. The management provided intrinsic as well as extrinsic benefits to the employees as reflected in the case study and it appeared more beneficial.
for developing effective and committed workforce for the knowledge based organization as mentioned by Pasher and Ronen (2011). The efforts of the management regarding increase in salaries and decision to make it competitive helped in attracting professionals from the market and they played very effective role in the transformation process as well. Blom and Melin(2003) conducted three case studies on transformation and also found the important role of competitive pay structures in retaining and attracting work force.

The Collaborative efforts were made by HR and TKM team to develop a strategy regarding capturing and analyzing information through exit interviews also found very helpful in identifying issues regarding major turnover in the organization. One of the serious problems faced by the management was employee turnover and it seems that the management never tried to identify reasons for the employee turnover in the past. The management realized such benefits of knowledge management very effective and further made it a regular feature to capture information from employees through surveys.

The TKM department took another important initiative of developing a portal for sharing information and ideas. It helped the management in getting true picture of the organization. The development of portal and blogs found very beneficial and gave surprising results. Due to appreciation by the top management regarding sharing of information and ideas employees were found more motivated. Now they were using this portal effectively for sharing their concerns and ideas. It has been further noticed that the management was able in providing suitable environment and culture for sharing information and activities like displaying list of knowledge workers which encouraged and motivated employees. Past research considered such activities as an important characteristic of knowledge based organizations (Awad and Ghaziri, 2007; Pasher
and Ronen, 2011). The management was able in developing culture suitable for knowledge based organization. Stewart and Mansingh (2010) also identified such knowledge management practices very effective and helpful in transforming Jamaica constabulary force. They used similar approach of information sharing through different portals and top management also appreciated and encouraged everyone to share their concerns and ideas. Ultimately, they were able to develop effective knowledge sharing culture.

The case study findings further reflect the use of change management practices very effective in motivating employees about this transformation initiative and such activities helped in minimizing their resistance level and developed a favorable environment for transformation. The change management initiatives regarding effectively communicating the benefits through engagement of top management found very useful and also facilitated the process of transformation. Past research also considered engagement of top management in communicating the benefits of transformation very effective and important in developing favorable environment for transformation (Roberts, 2014; Owden, 1999; Nonaka and Takeuchi, 1995). The focus of change management activities were mainly the individuals as well as groups and the management ensured to keep everyone well informed about the activities of transformation and used multiple means like newsletter, formal, informal meetings, seminars etc. Such practices were found effective in developing supportive environment for transformation and helped in effectively communicating the plans and strategies about transformation. Fiedler (2010) also mentioned such change management activities like developing understanding about major activities of transformation by communicating the necessary information to the stakeholders helped in proactively managing resistance and developing their positive perception about transformation.
The case study findings further highlight the importance of joint activities of knowledge management and change management during transformation process, such activities were found effective not only for transformation process but even supported each other in achieving their goals and objectives. Past research also identified the multiple benefits of such activities and stressed the need of such activities for sustaining the transformation process (Roberts, 2014; Coeurderoy, 2014).

The role of IT governance was also found supportive in managing, implementing and sustaining IT enabled transformation in the organization. The KTM team clearly indicated the responsibilities of consultants and IT team in managing ICT related services. The development of plan regarding security of data, ensuring availability of smooth IT services and development and implementation of IS solutions in the organizations led to managing issues with consultants and business process owners efficiently. The issues and conflicts were lessened because of IT governance in the organization. Past research identified lack of consideration to IT governance as a major cause of socio technical problems and failure of IT enabled change in the organization (Al Mashari and Zairi, 1999; Vestal, 2011).

The research also revealed the significance of changes in work environment already discussed in the case appeared to be very fruitful. It contributed a lot in transforming perception of customers and employees already residing in their minds. The TKM team took some measures like changing the layout and contents of the web site, change in logo and office stationery, help desk and some customer care activities etc. were found useful in building a new image in the minds of customers as well as employees of the organization.
The transformation efforts of this organization were found successful. The results of the case study reflect that the management was able to successfully manage issues and challenges they faced before transformation initiative and finally able to transform this organization into knowledge based organization. The transformation achievements discussed in the case clearly reflect the recognition of this success at national and international level. Both the core and supporting activities such as Proactive strategy of the management regarding people, process and technology; measures for planned change; effective communication and collaboration among the stake holders and formation of team; Top management support and engagement; Information and knowledge management strategy; effective change management practices; Business process reengineering and management; Training IT/managerial and IT governance found to be essential elements for transforming the organization in successful manner.

5.6 INTEGRATED DISCUSSION

The findings of individual case studies regarding the transformation initiative of public, semi public and private sector organizations have been rigorously analyzed with an objective to develop understanding about ICT enabled organizational transformation phenomenon. Moreover, the socio-technical issues and challenges along with remedial measures and their overall impact on transformation process have been discussed for each case separately. The findings reflect that among the four cases, three cases mentioned as A, B and D were success stories whereas the transformation initiative of organization C was found as disappointing. The management of organizations A, B and D achieved transformation objectives successfully whereas the management of C was unable to achieve transformation objectives as discussed already (see case detail 5.3). The outcome for each case is tabulated as under:
The case studies of A, B and D may be termed “organizational transformation”. The approach adopted by the management was revolutionary which requires fundamental changes in process, technology and concerning people. On the other hand transformation initiative of organization C seems to be just automation since the focus of management was only adoption of technology like ERP systems with minimum changes in the existing processes and working environment. Past research considered such initiatives as automation not transformation (see Venktraman, 1994; Hammer and Champy, 1993). Moreover, the benefits of revolutionary approach as discussed by Venktraman are reflected in the findings of Case studies A, B and D. These organizations achieved maximum organizational level benefits after transformation. Whereas, the organization C just gained minimum benefits as such change was occurred at department level i.e. finance department which adopted the changes as desired by the management. Such findings match with the findings of past research which noted minimum benefits of transformation initiative at departmental level and maximum benefits at organizational level initiatives (see Collins and Hill, 1998; King, 2007).
The sociotechnical approach adopted by the top management of organizations A, B and D addressed the social as well as technological aspects of transformation in a balanced way. The benefits of this approach were clearly reflected in the transformation initiatives leading to its success. The organization C adopted just technical approach for potential change through ERP systems implementation. The management hardly considered social aspects related to such change although the organization implemented ERP systems which are socio-technical in its nature (see Ash and Burn, 2003), so resultantly such initiative of transformation did not succeed in achieving the potential objectives. Such findings are in compliance with past research (See Bostrom and Heinen, 1997). The top management of organization C initiated some efforts related to redesign in business processes through BPR but failed miserably due to ignoring social aspects concerning people in the organization.

The transformation initiatives of organizations A, B and D reflect the process driven approach adopted by the management of these organizations. The overall transformation initiative was headed by business process owners and focus of the management was on end to end process integration and future needs of the organization. The top management of these organizations addressed the requirements of all work processes and working environment. On the other hand, the management of organization C adopted function driven approach by concentrating mainly on the needs of finance department and as a result finance department was automated. The employees and customers of organizations A, B and D enjoyed the transformation benefits throughout the organization due to considering process driven approach.

The results of these case studies identified an important aspect regarding perception of employees about transformation initiative and how it affected the ownership and acceptance of such change in the organization. The management of organization C assigned this transformation
initiative to the department of finance. This decision was found problematic in the long run. The perception of people about this transformation was just a “departmental activity” with an objective of “monitoring and control”. One of the reasons for the lack of ownership of different employees and meager interest in the transformation activities was mainly due to this reason. The management did not communicate the organizational level benefits to the employees. Lack of employee’s participation impeded the process of transformation. On the other hand, the management of other organizations tried to develop understanding about transformation initiative as organizational level project rather than just an “IT project”. This approach helped the management in developing a favorable environment for transformation initiative that consequently reduced the resistance of employees at the early stage of transformation process. The details of top management major consideration in each organization are tabulated as under:

<table>
<thead>
<tr>
<th>S#</th>
<th>Considerations</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Identifying current issues and problems related to people, process and technology</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Participative approach in important decisions</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Change Management activities at the outset of project</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Effective communication</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Knowledge management activities at the outset of project</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Information sharing culture</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Intrinsic/extrinsic motivation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Collaborative approach HR, IT Business process owners</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
Table-5.2 Considerations of the management

Further detail of each aspect mentioned in table 2 is as under.

The top management realized the importance of people, process and technology at the outset of transformation initiative. Priority was given to dig out the problems and issues related major organizational components (i.e. people, process and technology). These components are essential part of organization as mentioned in the past research (see loudon and loudon, 2014). As transformation of organization is concerned, Rouse (2005) considered strategy, process, technology and people skills as means for transformation. The top management of organizations such as A, B and D included people, process and technology related aspects in proactive strategy developed for organizational transformation to be successful. Both social and technological aspects were given due consideration equally during organizational transformation process. The
top management preferred to adopt socio-technical approach that stresses employee involvement and provide better framework to deal with organizational change with respect to technology (see Applebaum, 1997).

The strategic decision of the management to learn current status of people, process and technology related aspects prior to developing future transformation strategy found to be very productive. The management encouraged participation of stakeholders and shared the deficiencies the deficiencies and problems identified through OD consultants and the internal teams constituted so far with all the departments in the organization. This approach of top management found to be useful in developing awareness among the employees about the need of transformation. Applebaum (1997) also emphasized the need of developing “dissatisfaction with the present state” (i.e. deficiencies and problems with working environment of organization) in order to motivate the people for the future change. The management of organization C hardly made any efforts to encourage employees’ participation and awareness about issues and problems about existing system. The employees were not aware about the problems in the old system in practice. Due to such situation, the employees were not ambitious to adopt new system currently implemented. Consequently, the new system was not accepted by the employees. It might be due to not communicating the potential benefits of the new system and sharing problems of the old system.

The participative approach adopted by the management found to be very fruitful in developing favorable attitude of employees for transformation. The management of A, B and D decided transformation initiative after getting opinion from different stakeholders and encouraged everyone to communicate concerns and issues if any regrading transformation. The organizations B and D being public sector organizations did not practice employee participation in routine but
the management adopted participative strategy for initiating transformation initiative in the organization. This strategy was in compliance with the past research that advocates the participation of employees in early part of transformation as an effective strategy for the management regarding developing their favorable attitude and ownership of transformation process (see Rouse, 2011; Tichy 1983). The management of organization C followed typical practice of public sector organizations. They did not encourage participation of employees during any decision making. Such approach resulted in lack of ownership and lack of cooperation from the employees of this organization during the transformation process.

The transformation initiatives of these organizations reflect the importance of some enabling activities like change management in effectively implementing and sustaining transformation initiative in the organization. The transformation programs developed by teams like ICM, KTM reflect the importance given to this aspect at the outset of transformation initiative. The importance given to change management programs by the management reflects the importance of people aspect. The focus of the change activities in these organizations was mainly related to motivate individuals as well as groups in the organization about the transformation process and proactively managing their resistance and concerns. Such activities facilitated the process of transformation by winning trust of individuals as well groups on the transformation process. On the other hand, the top management of organization C hardly recognized the need of change management activities at the outset of the project. The meager consideration to change management activities at the outset of transformation initiative resulted in a lot of resistance from individuals as well as groups. Whereas the management of A, B and D faced minimum issues from the people as well as groups during the transformation process. Ward and Uhl (2012) also
found the important role of change management initiatives during transformation initiatives of successful organizations.

The case studies findings also identify enabling role of knowledge management activities along with change management activities helped in developing favorable and necessary environment for such a major change initiative in the organization. The management of organizations A, B and D effectively used the concept of “\textit{story telling}”, one of the important tools/techniques of knowledge management by communicating the benefits of transformation and sharing some success stories of some organizations. The issues and concerns of individuals were also minimized through this approach.

The management of these organizations also encouraged information sharing culture and used different techniques. The use of portals and intranet also found effective in communicating and sharing information in minimum time. The focus of such activities was mainly “\textit{providing right information to right person at the right time in a right format and the right place}’’.

The management also encouraged individuals in sharing concerns, thoughts, ideas and issues if any through intranet, online portals, blogs and Communities of practice (COP). Such techniques were found helpful in understanding the concerns, ideas and opinions of individuals. Past research also discussed the important role of knowledge management in facilitating the process of transformation and stressed the need of such activities in the organization (Bloodgood and Salisbury, 2001; Balint et al., 2016).

The management technique to keep everyone updated about the transformation activities was found very effective. For this purpose, the monthly newsletter played an effective role in communicating the plans and progress of transformation activities in the organization. The
information sharing culture in the organization also helped activities related to business process reengineering in the organization.

The management of organizations A, B and D effectively used knowledge management techniques like capturing tacit knowledge of employees in documenting existing processes and also identifying issues in the current processes. Moreover, due to collaborative approach and cooperation and involvement of HR, IT and business process owners in redesigning future business processes by considering the people and technological needs helped in proactively identifying training needs of employees. The management of these organizations effectively developed training plans for the employees and also communicated and shared with them. The sharing of training and development plan helped in reducing lot of concerns of individuals regarding their career growth etc. The management of organization C faced lot of challenges after business process reengineering efforts and unfortunately stopped the practices of BPR after having lot of resistance from union and different pressure groups. Moreover, due to lack of collaboration among HR, IT and business process owners and less consideration given to change management and knowledge management practices at the outset of project the management of organization C was unable to continue the practices of BPR. The whole initiative of change was badly affected due to this decision.

The enabling role of IT governance in successfully implementing ICT enabled organizational transformation has been found. All the organizations successfully implemented ICT infrastructure by giving due importance to this factor. The management of organization C got the benefit of IT governance plan developed by the new team. Similarly, the organizations A, B and also developed such plan in effectively managing services through vendors.
The efforts related to change in work environment by organizations A, B and D were found effective in changing perceptions of employees as well as customers. Moreover, the impact of managerial and leadership trainings helped the management in developing effective workforce for the organization and changing mindset of the individuals. The effective HR policy in the organization also helped in motivating the existing employees as well as attracting professional from the industry. Similar findings regarding the important role of HR in the transformation process were found in the Indian organizations by Bhatnagar et al. (2010).

5.7 LESSONS LEARNED

The findings of these case studies reflect the success as well as failure of organizations in achieving transformation objectives. The organization C failed in achieving desired objectives of transformation. While transformation initiative of Organizations A, B, and D found successful. The findings of these case studies along with rigorous literature review helped in identifying the reasons of success as well as failure. These findings will be useful for the management of future organizations interested in initiating transformation in the organization.

5.7.1 Failure of Transformation

The management of organization C was unable to achieve the objective of transformation due to the following reasons:

- Socio-Technical approach was not adopted. Preferred approach was technical rather socio-technical. The social aspects were almost ignored.
- The approach adopted was function driven rather than process driven.
- The approach adopted to manage this project was reactive rather proactive.
- Lack of participation of main stakeholders.
• Top management did not share the future plan effectively in the organization.

• Lack of top management support and engagement.

• Transformation strategy regarding people and process was not formulated properly.

• People were not properly communicated benefits of transformation and their perception about old system was not challenged.

• People were not aware about the objectives of change initiative and consequently considered it a threat to their jobs.

• Less importance given to BPR.

• The top management decision to abandon BPR activities has been identified as one of the bad decision made by the top management. It badly affected the whole process of ERP implementation.

• Less importance given to change management activities at the outset of project that resulted in poor management of people related issues.

• Sufficient efforts were not made to change the mindset of individuals, so they should accept the change.

• Information sharing culture was not promoted in the organization.

• Lack of effective communication and collaboration among departments.

• Training was not scheduled properly. Timing of initiating training activities was not appropriate due to this trained workforce was not available at important times of ERP implementation.

• The focus of the training was only IT, managerial training was not arranged.

• Less importance given to knowledge management activities.
5.7.2 Success of Transformation

The organizations A, B and D were successful in achieving their transformation initiative due to preference given to the following aspects:

- Proactive strategy regarding people, process and technology
- Adoption of Socio-technical Approach
- Transformation focus on people, process and technology
- Ensured participation of main stakeholders
- Top management support and engagement
- Understanding the issues and problems related to people, process and technology aspects at the outset of transformation
- Effective collaboration among HR, IT and business process owners
- Initiating change management activities at the outset of project
- Effective communication among the stakeholders
- Consideration of Knowledge management at the outset of the project
- Developing knowledge sharing culture
- Consideration of Business Process Management activities
- Developing ICT governance plan
- Effective Training plan

5.8 Conceptual Framework for ICT Enabled Organizational Transformation

This research attempted to develop a preliminary framework after rigorous analysis of four case studies. This research explained various aspects very relevant to people, process and technology
those were found as potential means for organizational transformation. The findings of the study led to evolve a framework for ICT enabled organizational transformation by identifying the potential “means” and “enablers” significant for the transformation process are depicted in Fig.1. The proactive strategy regarding people, process and technology appeared as essential element of transformation. Keeping in view the rigorous analysis of transformation process, lessons learned and issues and challenges faced by the management the framework proposed by this research identified people, process and technology as potential means for ICT enabled organizational transformation. Furthermore, knowledge management, change management, business process management and ICT governance contributed a lot for transformation to be smooth and successful. Due to their enabling role in the transformation process they were termed as potential enablers for organizational transformation. The means and enablers identified may play a significant role in achieving objectives of transformation leading to its success. Moreover, research also elucidated the role of potential enablers during the important phases of transformation and also highlighted their significant contribution in effectively managing issues and challenges of transformation.
5.9 SUMMARY

This chapter presented the analysis and discussion on the case studies discussed in the previous chapter 4. Each case study is analyzed separately as mentioned in the research design chapter 3. Moreover, an integrated discussion regarding the findings of the four case studies helped in
understanding the complex phenomena of ICT enabled organizational transformation and finally led to a framework proposed.

The analysis encompasses the major the aspects concerning organizational strategy developed by each organization about people, process and technology and consideration of other factors. The commonalities among the various aspects considered were analyzed in addition to other aspects which vary case to case for their contribution in the organizational transformation process. The findings reflect that the organizations adopted socio-technical approach and developed proactive strategy about potential means (people, process and technology) were successful in their efforts. Whereas, the organization that ignored socio aspects and mostly focused on technical aspects faced disappointing outcome. Moreover, the organizations those made planned efforts about potential enablers (knowledge management, change management, business process management and ICT governance) were found successful in achieving their transformation objectives. The next chapter presents conclusion drawn, guidelines/recommendations for the practitioners and future research direction.
CHAPTER 6: CONCLUSION AND FUTURE RESEARCH

6.1 INTRODUCTION

This chapter presents the conclusion extracted from four case studies. It may provide guidelines to the top management interested in initiating ICT enabled organizational transformation in their organization. The conclusions are based on rigorous case studies findings and critical analysis conducted for deep understanding of the phenomena under research. The final part of this chapter includes opportunities for further research in the area of ICT enabled organizational transformation.

6.2 CONCLUSIONS

The main objectives of this research were discussed in the chapter 1. The first objective was to understand phenomena of ICT enabled organizational transformation from socio-technical perspective. The detailed understanding of this phenomenon is indebted to four case studies conducted in public as well as private sector organizations in Pakistan. The rigorous analysis of these case studies helped in understanding the complex nature of this phenomenon. The conceptual framework proposed at the end of chapter 5 reflects the role of potential means and enablers in successfully executing and managing the transformation process in an organization. The people, process and technology were found as potential means of organizational transformation. Furthermore, the enabling role of change management, knowledge management, ICT governance and business process management has been realized as an important aspect not only to lead transformation process but to sustain it in future.

The decision of the top management regarding participation of HR, IT and business process owners during transformation process also found effective in anticipating the issues and
problems related to people, process and technology. It helped the management in proactively managing such issues and problems related to these aspects. Top management support and engagement, collaborative work, effective communication among stakeholders and participative approach of the top management contributed positively to the transformation initiative.

Research findings leading to conceptual framework proposed may be considered as one of the important contributions of this research. The ICT enabled organizational transformation is an emerging phenomena and demand in-depth understanding at the outset of this initiative in any organization. The theories and frameworks provided by different researchers were mainly based on research conducted in the context of developed countries. The research gap identified in chapter 1 has been addressed through case studies conducted in public as well as private sector organizations. The lack of research regrading organizational transformation in the context of public sector organizations has also addressed so far. Three case studies were conducted in public sector organizations and results of these case studies gave an insight in to this phenomenon. Among three case studies in public sector, two case studies reflect that organizational transformation initiatives meet the goals of transformation, so it may be termed as “successful transformation”. Whereas, third organization failed to achieve transformation goals and objectives and it may be termed as “failure”. The fourth case study was conducted in private sector organization. It also helped in understanding the transformation process in a multinational organization working in developing countries.

Another objective of this research was identification of socio-technical issues and their remedial measures. The issues identified were mostly related to social and organizational aspects. Currently ICT is more advanced as compare to previous decades and as a result technical problem seldom occur as compared to social/organizational ones. The research study findings
support this claim. As evidenced people related issues were more spread as mentioned in the previous chapter. The proactive approach preferred by the top management to deal with such social/organizational issues has been found effective. Furthermore, top management encouraged participation of HR, IT personal and business process owners during the transformation process that consequently helped a lot to address socio-technical issues and problems. The proactive strategy helped in managing people and organizational related issues and challenges.

The priority given to effective communication, information sharing, knowledge sharing, coordination among the stakeholders, documenting lessons learned and further the knowledge applied led to the conclusion that knowledge management was preferred in the organization. It was found that knowledge management related practices played very effective role for transformation process to be smooth and eventually successful.

Regarding managing and sustaining the change the top management created awareness about the need and benefits of fundamental change, issues, problems and challenges in the existing system. The importance given to change management practices to cope with user resistance and creating favorable environment for transformation supported in managing socio-technical issues effectively.

The effective role of ICT governance in managing and sustaining ICT enabled change has been found in the organization. The issues and challenges due to outsourcing of IT activities were managed successfully. The management was able in sorting out technical problems proactively by developing ICT governance plan in the organization. ICT governance also found helpful in effectively managing issues with the consultants and service providers.
Due consideration given to business process management played a vital role in managing issues related to change in work processes carried out through BPR. The efforts in identifying the impact of business process related changes on people and technology was found effective in managing socio-technical issues in the organization.

The collaboration among HR, IT and business process owners consequently addressed socio-technical issues to be managed in a successful manner by identifying the impact of changes in work processes on people and technology. It facilitated the management in managing issues and problems effectively in the organization and enabled the transformation process to be successful.

The findings thus emerged as a major contribution towards understanding organizational transformation process and consequently it provides guidelines to the organizations interested to be transformed for their survival in today’s competitive world.

6.3 RECOMMENDATIONS

Following are the recommendations for the top management of organizations interested in initiating ICT enabled organizational transformation in their organizations.

- Preference should be given to proactive strategy regarding people, process and technology. Firstly, they should concentrate in identifying issues and problems related to these aspects. The issues and challenges thus identified must be shared with relevant stakeholders in the organization. The management should also share external issues and challenges with employees of the organization in order to develop a favorable environment for transformation. The organizations looking for to be transformed should adopt proactive strategy rather than reactive.
Consideration must be given to socio-technical approach for ICT enabled organizational transformation. They should give equal importance to social as well technical aspects of organization during the transformation process.

The management should develop pro-active strategy regarding people, process and technology.

The management should adopt holistic approach by understanding the potential issues and problems of transformation related to people, process and technology aspects and proactive remedial strategy should be developed strategically.

The transformation initiative must be planned and then it should be driven by business process owners by keeping in view the future business needs of the organization.

The top management should adopt business process management (BPM) approach to redesign business processes in the organization. They should focus on end to end process integration and consideration must be given to identify the impact of change in work processes on people and technology aspects.

The change management strategy should be formulated at the outset of transformation initiative.

The planned efforts should be made in creating awareness among the employees about transformation initiative and the potential benefits those can be gained.

Top management should develop proper feedback and monitoring system to look after and manage the activities of transformation.
• The individual as well as groups must be communicated the need and benefits of transformation.

• Story telling techniques may be used in communicating benefits of transformation

• Effective communication among the stakeholders must be ensured.

• The management should develop and encourage collaboration and cooperation with the consultants and service providers

• Top management should develop an environment where individuals and groups share their concerns and ideas openly without any fear and favor.

• The top management should address the concerns of individuals and groups in the organization. They must be communicated the action taken in this regard.

• The involvement of HR, IT and Business process owners must be ensured during transformation process.

• Top management support and engagement throughout the transformation journey is critical and efforts must be made in this regard

• Identify proactively the training needs of employees as well as customers.

• Training focus must be on developing technical as well as managerial skills in the employees.

• The important role of knowledge management activities must be realized at the outset of project.

• The management should develop a knowledge sharing culture in the organization.

• Planned efforts must be made in capturing tacit as well as explicit knowledge in the organization from the employees as well as customers
The importance must be given to ICT governance at the start of such initiatives
The due consideration must be given to changes in the work environment

6.4 FUTURE RESEARCH

The research on ICT enabled organizational transformation could be enhanced by conducting more case studies regarding cloud based transformation. How the organizations may be affected, whether they need major change in their processes, roles and responsibilities. Up to what extent they need to redesign their activities, roles, responsibilities and structures. The other researcher may use some theory like activity theory in understanding this phenomenon from a different angle. Moreover, the socio-technical issues and challenges related to cloud based transformation need to be explored.

The rapid change in ICT has profound effect on organization so the transformation process in such scenario needs to be explored in further studies. The conceptual framework proposed may be tested empirically in future in public as well as private sector organizations. The role of IT governance frameworks like COBIT and ITIL may be explored in the ICT enabled organizational transformation. Similarly, the role of knowledge management strategies like personalization and codification may be further investigated during the transformation initiatives of different organizations. Future research may be conducted in comparing transformation strategies of specific sectors like health, banking, and education sectors etc.

6.5 SUMMARY

This chapter presented the final conclusion of this research. The outcome and implications of this research along with recommendations for the top management of organizations
interested in initiating ICT enabled organizational transformation in organizations. The importance must be given to the socio-technical approach for successfully initiating transformation initiatives in the organization. The proactive strategy regarding people, process and technology may help in successfully achieving transformation objectives. The enablers explored so far like change management, knowledge management, business process management and ICT governance may play a significant role in successfully planning, implementing and sustaining transformation initiative in the organization. The framework and the guidelines provided by this research may be helpful for the top management to cope with the potential challenges of ICT enabled organizational transformation.
REFERENCE


Retrieved from http://nsuworks.nova.edu/tqr/vol13/iss4/2


Appendix A

Interview Guide

The common questions asked during interviews are as under:

1. Has your organization undergone major change?
2. Why was organization transformed?
3. Do you think your transformation initiative was planned?
4. What sort of strategy was formulated to proceed with transformation?
5. Which aspects were included in the strategy?
6. Do you think the scope of transformation was well defined?
7. Did the management encouraged employee participation at any stage?
8. What efforts were made by the management to develop awareness about change to be embraced?
9. What was the reaction of the employees regarding transformation initiative?
10. How were the concerns of people addressed, if any?
11. How the transformation process was executed?
12. Were existing work processes critically analyzed prior to transformation initiative?
13. Were the work processes redesigned? If so, how?
14. What sort of issues were faced by the management due to redesigning of business processes?
15. How were such issues addressed?
16. Was there any change in existing ICT infrastructure?
17. How such change in ICT infrastructure was initiated?
18. Would you please comment on any issues and challenges faced by the organization regrading such initiative?
19. How were such issues addressed, by the management?
20. How the transformation process was managed?

21. Do you think the objectives of transformation were achieved?

22. Which aspects do you think are critical in transformation process?

23. What are your recommendations for the future managers interested in initiating such transformations in their organizations?
Appendix B

The Director General,
Passport and Immigration,
Islamabad

Subject: **Request to allow PhD Candidate Mr. Abdul Zahid Khan to interview your senior managers**

The International Islamic University Islamabad (IIUI) aims at developing an international Islamic seat of higher learning, research instructions and trainings in various branches of knowledge with special emphasis on Islamic Studies, Social Sciences, Engineering, Technology and Humanities to be taught, studied, developed and reconstructed in such a way so as to produce a balanced and harmonious human personality. We strive hard to provide a conducive and intellectual environment for creative, analytical and critical thinking in order to solve comprehensive societal problems through teaching and research. Research projects are integral part of our programs.

Mr. Abul Zahid Khan is working as Assistant professor in our University. In addition to his academic responsibilities he also developed IT plans and participated in planning and offering new programs in Faculty of Management Sciences. He is Cisco and SAP certified consultant and having more than seventeen years of teaching and research experience. He is a PhD scholar specializing in the field of Technology Management. **His area of research interest is ICT enabled organizational transformation.** The objective of his research is to explore the socio-technical challenges faced by the organization and the potential remedial measures taken by the management to overcome the challenges leading to successful transformation. His research work necessitates him to visit various organizations for research, conducting personal interviews and gathering other allied information for incorporation in his dissertation.

He intends to conduct a case study encompassing exploring the process of ICT enabled organizational transformation in your esteemed organization.

We shall be grateful for your assistance and cooperation and assure you the information collected will be used only for academic purposes.

With kind regards,

Syed Tahir Hussain Rizvi
Coordinator H S&R
Appendix C

SECURITIES & EXCHANGE COMMISSION OF PAKISTAN
(Human Resource Department)
NIC Building, 63-Jinnah Avenue, islamabad

SECP/HR/Misc/2016
Dated: February 23, 2016

Dr. Zulfiqar Shah
Chairman H S&R
Faculty of Management Sciences
International Islamic University
Faculty Block – 2, Sector H-10 Campus
Islamabad

Subject: REQUEST TO ALLOW PH.D CANDIDATE MR. ABDUL ZAHID KHAN TO INTERVIEW SENIOR MANAGERS

Please refer to your letter on the above mentioned subject. In this regard, I have to inform that Mr. Abdul Zahid Khan may directly coordinate with the following senior officers of the Securities and Exchange Commission of Pakistan (SECP) for interview:

1. Mr. Zafar Abdullah, Commissioner (051-9100464)
2. Mr. Imran Inayat Butt, Executive Director (051-9100436)
3. Mr. Arshad Mahmood, Additional Director (051-111-117-327/360)

2. Mr. Khan may take prior appointment from the mentioned officer(s) before visiting them for the purpose.

Best regards,

Khalid Iqbal
Director (HR)