Towards a Business Process Reengineering Model for Managing the SMES Information Technology Resources

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Abstract—Nowadays, most companies usually become aware of the problems regarding the implementation of business processes for managing IT resources. In such circumstances managers usually obtain a new integration of other models for enhancing the business and information processes according to the changed business needs. In the modern business practice, identifying the significant percentage form the driving mechanism of the market economy helped to overcome a number of issues in these markets. In this sense the adaptation if reengineering concept changed the traditional understanding for business conduct. This is due to using IT resources in all fields of industrial production. Therefore, IT recourses influence significantly the business activity of a number of organizations. This paper aimed to design a Business Process Reengineering (PBR) model for managing the IT resources in the SMEs. Prior researches were reported to indicate the effects factors on the business process in the SMEs.

Index Terms— *Business process reengineering, small medium enterprises, IT business management, management strategies*

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1 INTRODUCTION

BPR is the analysis and redesign of workflow within and between enterprises. BPR is a method that promotes change and introduces new processes and new styles of working. BPR helps to carry different elements to make change possible. These elements are known as enablers and may be defined as elements that act as vehicles for processes to change (Gunasekaran & Kobu, 2002).

Some organizations have put forth extensive BPR efforts only to achieve marginal, or even negligible, benefits. Others have succeeded only in destroying the morale and momentum built up over the lifetime of the organization (Mallin, 2006). Many unsuccessful BPR attempts may have been due to the confusion surrounding BPR, and how it should be performed. Organizations are well aware that changes needed to be made, but did not know which areas to change or how to change (Weske, 2007).

There is a relationship between BPR and information technology (IT). The use of IT is to challenge the assumptions inherent in the work processes that have existed since before the advent of modern computer and communications technology (Koning, Bos, & Brinkkemper, 2008).

IT should be viewed as more than an automating or mechanizing force but rather as a way to fundamentally reshape the way business is done (Koning, et al., 2008). Many researchers and practitioners have increasingly considered factors related to IT infrastructure as a vital component of successful BPR efforts (Drew, 2007). Moreover, top management should act as a strategy formulator who provides commitment for the whole process of redesign. The strategy describes the role of IT in leveraging changes to business processes and infrastructures (Wan, 2009).

BPR could be applied to all business sectors. Small and Me-
dium Enterprises (SME) could achieve tremendous advantages by adopting BPR. Some of the advantages that BPR could bring to SMEs are; ability to obtain deals with different customers e.g. suppliers, manufacturers, distrusters, banks, etc; advanced IT solutions e.g. e-commerce, e-business, etc; improved speed of response; cost savings; improved communications, information and knowledge sharing; reductions in inventory; improved efficiency and productivity; harmonization and standardization of procedures; better transfer of best practices; acquisition of new customers and increased sales; and improved customer service.

2 PRIOR RESEARCH

Misra (2006) mentioned that it is important to involve information technology (IT) alignment process in the role of human resource (HR) especially in the pre-acquisition stage to minimize the post acquisition shocks. He stated that "policy, attitude of strategic decision makers, decision making style in the organization; perception of users on IT (fear of losing importance and or anxiety to use technology) also influence end-users in accepting IT in human resource (HR)". He also applied a model which stressed the importance of strategic and tactical level managers to understand the processes in the pre-acquisition stage and then organize a measuring tool to monitor the acquisition process in human resource.

A study by Jansen-Vullers, Netjes and Reijers (2004) present the hard way that successful ecommerce requires more than a flashy web presence. This study explains the existing business processes which must be seamlessly integrated with the new, electronic form of interaction with suppliers and customers. This study elaborates both qualitative and quantitative support for redesigning business processes in the context of e-commerce. They conducted their study by giving directions on how processes may be reengineered with this aim, particularly

within the service industry. The presented views are based on existing research into BPR best practices and applied in two case studies: one broad and qualitative case study to show the applicability of the best practices, and one small quantitative case study to show the benefits in terms of lead time reduction due to the application of best practices.

Additionally, Ashayeri, Keij and Brker (1998) discussed the complexity of strategic decision problems in the development organizations. This addressed the issues of the increase in the number of factors that influence decisions about organizational change, such as detail complexity, especially in global businesses, to take system-dynamic relationships among business processes into account, such as dynamic complexity. Ashayeri, et al., aimed forward a conceptual framework of a decision support system, assisting management in handling these dimensions of complexity. The study given two dimensions of complexity (detail and dynamic), decision problems, mainly of global businesses, are too complex to be worked out manually, without the help of a decision support system. The proposed framework could be used to prioritize projects and to make a long-term strategic plan in a constructive and structured way.

While Ayd nl , Brinkkemper and Ravesteyn (2008) described the business process and organizational re-design and implementation project for an e-government service organization. In this project the initial process execution time of a Virtual Private Network (VPN) connection request has been reduced from some 60 days to two days. This has been achieved by the use of a new business process reengineering (BPR) implementation approach that was developed by the Utrecht University. The implementation approach is based on a combination of Enterprise Information Architecture (EIA), Business Process Modeling (BPM), and Knowledge Management. The method has been applied to improve the performance of a Dutch e-government service department (DeGSD).

Srecko (2006) reports the organizations periodically that start their information system reengineering projects because they start new business, want to replace an old information system with modern information technology or support their business strategy. Srecko stated the lacks of the new organizations in managing their businesses, some of these organizations start with business process reengineering projects and then upgrade it with information system reengineering projects. Hence, he focused on the question that leads to better business reengineering. Moreover, Srecko addressed the answers of some questions with a focus on successful early decisions about information system reengineering.

A study by He (2005) presents the effectiveness of BPR in improving the business productivity in China. The study also consisted on two questions: How do Chinese business executives view benefits, critical success factors, and major obstacles of BPR implementation? What are the managerial implications of BPR in China? The data was adopted from participants based on survey questionnaires with a 195 survey questionnaires out, 110 usable returns were received. The statistic

analysis results indicate that while BPR has played an important role in making the enterprises in China more effective and efficient which reflects importance of management support, cross-functional communications, cross-unit project team, and measurable BPR as a critical success factors in improving the business productivity based BPR.

Mansar and Reijers (2007) reported impact of BPR on staff motivation. The study obtained an online survey among a wide range of experienced BPR practitioners in the UK and The Netherlands. The result indicated that BPR helped to determine the motivation among staffs during performing tasks. Moreover, indications for their business impact have been collected and classified.

3 PROPOSED MODEL

Based on the aforementioned researches, we found that cost management effects on the managing process of IT resources in terms of plan, work analysis, management strategies, salary system, training and development. Furthermore, the prior researches revealed that BPR has a significant relationship with motivation which effects by skills, attitude, and manner. Productivity also was found to be highly effects the development of BPR in the SMEs in terms of forces, business value, and corporate image. While technology effected by the adaptation of new tools and services, and the cost of these tools into the development BPR for managing the IT resources in the SMEs as shown in Figure 1.
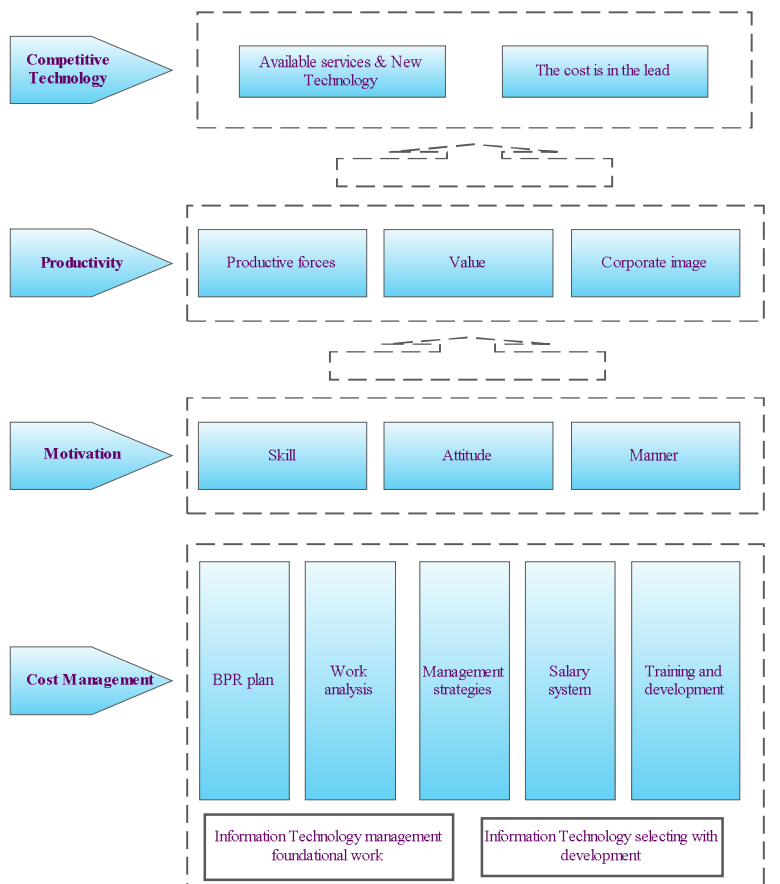
Figure 1: BPR model for managing IT resources in the SMEs

4 EXPECTED OUTCOMES

The proposed model could:
- Helps to improve efficiency;
- Quick delivery of products;
- Cost saving for the organization in the long run;
- Enabling the emergence of new businesses within the same organization;
- Controlling cost and improving efficiency.

5 CONCLUSION

Indicating the suitable BPR model for managing a definite business process would helps to re-construct the fundamental of rethinking and transformation of different business process. We have found that reengineering of business requires not only a redesign of business processes but a concurrent examination and redesign of the information technologies and organization that support these processes. In this paper, we have designed BPR model for managing the IT resources in the SMEs based on the relationship of cost management, motivation, productivity, and competitive technology with different business management factors.

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