

BUSINESS PROCESS REENGINEERING IN SMES (CASE STUDY AT ALSULTAN
COMPANY)

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Specially dedicated to my beloved parents, fiance, and brothers

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ABSTRACT

The purpose of this study is to apply the most appropriate business process reengineering (BPR) methodology in reducing cost, shortening the processes time and enhancing the customer satisfaction for SMEs (small medium enterprises). Comparison of eight BPR methodologies has been conducted in order to come up with the most suitable reengineering methodology for SMEs. Based on the result of the comparison, the researcher has chosen the BPR stages methodology to be applied in Alsultan Company that has been selected as a case study. Interviews were conducted with top management to collect the required data including the company's objectives, performance objective, critical process and problems associated with these processes. After applying the BPR stages on the Alsultan Company, several processes were identified that could be improved are ordering, payment, logistic, account payable and complaint process. The outcome of this study which is referred as the to-be processes was verified by the top management of Alsultan Company in order to ensure it is met with the company objectives. As a result, this study proposed the BPR stages methodology is the most appropriate methodologies that can be applied for a drastic upgrade of SMEs.

ABSTRAK

Tujuan kajian ini dijalankan adalah untuk melaksanakan kaedah perniagaan kejuruteraan semula proses (BPR) yang sesuai dalam mengurangkan kos, mengurangkan masa pemprosesan, dan meningkatkan kepuasan pelanggan di dalam perusahaan perniagaan kecil (SMEs). Perbandingan terhadap lapan kaedah BPR telah dijalankan untuk menghasilkan kaedah kejuruteraan semula yang paling sesuai untuk SMEs. Berdasarkan hasil kajian perbandingan tersebut, pengkaji telah memilih kaedah berperingkat BPR untuk diaplikasikan pada Syarikat Alsultan yang telah dipilih sebagai kajian kes. Temubual telah dibuat dengan pengurus atasan untuk mengumpul data-data yang diperlukan termasuk objektif- objektif syarikat, objektif-objektif prestasi, proses-proses kritikal, dan masalah-masalah yang berkaitan dengan proses-proses tersebut. Selepas mengaplikasikan BPR berperingkat kepada Syarikat Alsultan, beberapa proses telah dikenalpasti untuk diperbaiki adalah pesanan, pembayaran, logistik, akaun yang perlu dibayar, dan proses . Hasil daripada kajian ini yang dirujuk sebagai proses-proses yang akan datang telah disahkan oleh pihak pengurusan atasan Syarikat Alsultan untuk memastikan ianya memenuhi objektif-objektif syarikat. Sebagai hasil, kajian ini telah mencadangkan kaedah BPR peringkat adalah antara kaedah-kaedah yang sesuai yang boleh diaplikasikan untuk meningkatkan SME dengan drastik.

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CHAPTER 1

RESEARCH OVERVIEW

1.1 Introduction

A company that wants to increase its market share or obtain more profits must adapt a change in order to satisfy its customers and to be a leading company. Therefore, many changes in business methods are beginning to appear. One of them is business process reengineering.

Business Process Reengineering (BPR) is defined as the “fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service, and speed” (Hammer & Champy, 1993). Business process re-engineering is the analysis and design of workflows and processes within an organization. According to Davenport, business process is a “set of logically related tasks performed to achieve a defined business outcome”(Davenport, 1992).

In the past few years, small and medium enterprises (SME) have made rapid progress and have become the important force of most countries. But with globalization and the development of information technology, the market competition have become more and more intense, thus the SMEs are facing more challenges. It is difficult for traditional methods to adapt to global competition and rigorous market change. BPR is a type of modern management techniques, which could help an enterprise to increase its competitiveness, and its ability to survive and grow. It was modern management thoughts

and methods proposed in the 90's of the last century. Its core concept is to continuously reconsider and revise the business of the enterprise, and then improve the elements dramatically, which reflects the enterprises capability as a whole, including cost, time, quality, service, speed and environment etc.

Alsultan Company is considered as one of the small companies that was founded in 1980. It is located in Jeddah-Saudi Arabia and it concentrates in traditional cloths manufacturing. It is considered as one of the great competitor companies in the field of clothing. Furthermore, Alsultan provides its customers with a wide range of garments and clothing options, including formal cloths. It consists of seven branches distributed in Jeddah city and run by a total of 30 employees.

1.2 Problem Background

Nowadays the competition in business environment has become so hard. Companies need to establish strong relationship with other customers, while many small companies are still experience several problems in various areas such as fulfilling customer demand, resource utilization, customer order, customer satisfaction (Yahaya, Fithri, & Deraman, 2012). Many small to medium size enterprises fail in their business due to weaknesses in their business process. So, SMEs needs to reengineer the business process in order to improve their profitability (Figg, 2007).

The vision of Alsultan Company is to obtain as much profit as possible and to be a leading company in the field. It has a high competitiveness rate in their industry and provides good quality services to their customers. Alsultan faces many problems in their business process that lead to low profits and time losses. It runs the business process manually, such as account process, sale process, order process, payment process and customer service; it generally manages their business based on employees' efforts. The company complains from sales limitations and time losses that lead to customer dissatisfaction, decrease of profits and expenses increase in the sale system processes. The employee of the company spends a lot of time in account payable process since they

manually save, arrange, keep, match the documents and retrieve thousands of receipts that cause time wastage when dealing with bills pile high as mountain. In addition, the customer of the company suffers a lot in order to complain about the product they have bought.

The problems declared or above indicate that Alsultan has major obstacles. As a step to solve and overcome the problems, BPR is seen as the solution. This is because BPR is a solution for inefficiency and ineffective business process, BPR is the potential reason for a company to grow and enhance its productivity via time shrinking process, reducing costs and satisfying the customers (Al-Mashari & Zairi, 1999).

1.3 Problem Statement

Firms benefit if they respect the underlying principles of BPR. In particular SMEs need to review business processes around customer requirements using IT more innovatively

SMEs faces big obstacles and challenges in conducting their business, the transaction of sales are limited, time consuming, lack of contact with customers, high cost, and little profit. Most of SME's manager believe they should manage their business based on employees' efforts and the result consuming a lot of time.

1.4 Research question

In order to address the highlighted questions in the previous section, there are three objectives:

- What is the available BPR methods that suite SMEs?

- How to implement BPR methods in Alsultan Company?
- How to evaluate the proposed business process in Alsultan Company?

1.5 Objectives of the study

In order to address the highlighted issues in the previous section, there are three objectives:

- 1) To investigate the most appropriate BPR method for SMEs,
- 2) To apply the most appropriate BPR method in SMEs (Alsultan as a case study).
- 3) To evaluate the proposed to-be process by the top management in Alsultan company.

1.6 Scope of study

The research will cover three points as shown below:

- The study will focus on the BPR methodologies that applicable for SMEs.
- The study will concentrate on Alsultan's critical processes.
- The interviews will be conducted with the top management of Alsultan company, while questionnaires will also be distributed to the same top management of Alsultan company.

1.7 Importance of Study

Applying the suitable BPR methodology for SMEs helps to reengineer the business processes to achieve dramatic improvement in time, cost and quality; the result of implementing BPR is to come up with new processes that realize the success in the company and enhance the customer satisfaction. BPR is seen as a solution for Alsultan to be a leading company.

1.8 Chapter Summary

This chapter provides the background of the research, which consists of the introduction of the research, and the problem background for the Alsultan Company. The chapter further explains the objectives towards the problems statement, and finally the chapter provides the significance of the research.

REFERENCES

- Al-Mashari, M., & Zairi, M. (1999). BPR implementation process: an analysis of key success and failure factors. *Business Process Management Journal*, 5(1), 87-112.
- Alsaleh, A. (2012). Exploring Strategies for Small and Medium Enterprises in Saudi Arabia .
- Ahmed Al Saleh *RIBM Doctoral Symposium*.
- Antunes, P., & Mourão, H. (2011). Resilient business process management: framework and services. *Expert Systems with Applications*, 38(2), 1241-1254.
- Armistead, C. (1996). Principles of business process management. *Managing Service Quality*, 6(6), 48-52.
- Bagheri, R., Hassani, K. M., & Eslami, S. P. (2013). A Novel Reengineering Methodology for Organizations as Complex Adaptive Systems.
- Bertolini, M., Bevilacqua, M., Ciarapica, F., & Giacchetta, G. (2011). Business process re-engineering in healthcare management: a case study. *Business Process Management Journal*, 17(1), 42-66.
- Bitzer, S. M. (1995). *Workflow Reengineering: A Methodology for Business Process Reengineering with Workflow Management Technology*: DTIC Document.
- Chang, J., Levy, M., & Powell, P. (2009). Process re-engineering success in small and medium sized enterprises. *International Journal of Enterprise Information Systems (IJEIS)*, 5(3), 14-26.
- Crowe, T. J., Fong, P. M., Bauman, T. A., & Zayas-Castro, J. L. (2002) .Quantitative risk level estimation of business process reengineering efforts. *Business Process Management Journal*, 8(5), 490-511.
- Davenport, T. H. (1992). *Process innovation: reengineering work through information technology*: Harvard Business Press.

- Du, J., Wang, Y., & Jiao, J. (2010). *A Fundamental Framework of Business Process Reengineering Methodology Based on IT*. Paper presented at the Management and Service Science (MASS), 2010 International Conference on.
- Figg, M. J. (2007). *Reengineering the Business Processes In Small, Medium And Micro Enterprises (Smme's) In Order to Improve Profitability*. Port Elizabeth Technikon.
- Furey, T. R. (1993). A six-step guide to process reengineering. *Strategy & Leadership*, 21(2), 20-23.
- Grey, C., & Mitev, N. (1995). Re-engineering organizations: a critical appraisal. *Personnel Review*, 24(1), 6-18.
- Hammer, M., & Champy, J. (1993). *Reengineering the Corporation: A Manifesto For Business Revolution* Nicholas Brealey. New York.
- Harrison, D. B., & Pratt, M. D. (1999). A methodology for reengineering businesses. *Strategy & Leadership*, 21(2), 6-11.
- Hunt, V. D. (1996). *Process mapping: how to reengineer your business processes*: Wiley.
- Karikomi, S., & Kenkyūjo, A. K. (1998). *The Development Strategy for SMEs in Malaysia*: APEC Study Center, Institute of Developing Economies.
- Liem, J. (2005). A comparison of BPR methodologies.
- Lindsley, M. L. B. (1994). *Strategically aligning your company to reengineer business processes*. Paper presented at the The NORTHCON'94 Conference.
- Love, P., Gunasekaran, A., & Li, H. (1998). Putting an engine into re-engineering: toward a process-oriented organisation. *International Journal of Operations & Production Management*, 18(9/10), 937-949.
- Marjanovic, O. (2000). Supporting the “soft” side of business process reengineering. *Business Process Management Journal*, 6(1), 43-55.
- Mason, R. M. (1997). *SME adoption of electronic commerce technologies: implications for the emerging national information infrastructure*. Paper presented at the System Sciences, 1997, Proceedings of the Thirtieth Hawaii International Conference on.
- Michael, B. (2003). *Re-engineering the corporation: A manifesto for business revolution*: Palgrave Publishers Ltd Brunel Rd Bldg, Houndmills, Basingstoke Rg21 6xs, Hants, England.
- Motwani, J., Levenburg, N. M., Schwarz, T. V., & Blankson, C. (2006). Succession Planning in SMEs An Empirical Analysis. *International Small Business Journal*, 24(5), 471-495.

- Muthu, S., Whitman, L., & Cheraghi, S. H. (2006). *Business process reengineering: a consolidated methodology*. Paper presented at the Proceedings of the 4 th Annual International Conference on Industrial Engineering Theory, Applications, and Practice, 1999 US Department of the Interior-Enterprise Architecture.
- Nandan, S. (2009). Adoption of Information and Communication Technology in Small and Medium Enterprises: A Synthesis of Literature.
- Olalla, M. F. (2000). Information technology in business process reengineering. *International Advances in Economic Research*, 6(3), 581-589.
- Pavic, S., Koh, S., Simpson, M., & Padmore, J. (2007). Could e-business create a competitive advantage in UK SMEs? *Benchmarking: An International Journal*, 14(3), 320-351.
- Pool, P. W., Parnell, J. A., Spillan, J. E., & Carraher, S. (2006). Are SMEs meeting the challenge of integrating e-commerce into their businesses? A review of the development, challenges and opportunities. *International journal of information technology and management*, 5(2), 97-113.
- Rashaniphon, S., Sarideepan, W., Apichotborworn, C., & Ammarapala, V. (2011). Business Process Reengineering (BPR) and Thai Small and Medium Enterprises (SMEs). *International Proceedings of Economics Development & Research*, 8.
- Shalaby, N. M. (2004). SMEs Development in Saudi Arabia. In C. o. C. a. I. S. A. Eastern Province (Ed.). Saudi Arabia.
- Sharma, G. (2011). Do SMEs need to strategize? *Business Strategy Series*, 12(4), 186-194.
- Venkatraman, N. (1991). IT-induced business reconfiguration. *The Corporation of the 1990s. Information Technology and Organizational Transformation*. Oxford University Press, New York, 122-158.
- Whitman, M. E., & Gibson, M. L. (1997). Factors affecting the use of information technology in business process reengineering. *Information Resources Management Journal (IRMJ)*, 10(3), 5-17.
- Yahaya, J. H., Fithri, S., & Deraman, A. (2012). An Enhanced Workflow Reengineering Methodology for SMEs. *International Journal of Digital Information and Wireless Communications (IJDIWC)*, 2(1), 51-65.
- Zellner, G. (2011). A structured evaluation of business process improvement approaches. *Business Process Management Journal*, 17(2), 203-237.