CHAPTER 1: INTRODUCTION

1.1 Introduction

In today’s ever-changing world, the only thing that does not change is the word ‘change’ itself. In a world increasingly driven by the three Cs: customer, competition and change; companies are on the lookout for new solutions for their business problems (Hammer and Champy, 1993). The days have long gone when organizations could rely on 'doing things the old way'. Computer technology has changed forever the way that organizations operate. Business Process Reengineering (BPR) is a way of bringing about change in an organization to make it leaner and fitter as we are in a new millennium (Thyagarajan and Ali Khatibi, 1994).

BPR is one of the management techniques to influence the business and governmental communities. The aim of reengineering is to analyse existing business processes as it exists and recreate / amend new ones that focuses exclusively on company growth and more profit. Improving business processes is paramount for businesses to stay competitive in today's marketplace. Companies have been forced to improve their business processes because customers are demanding better products and services. If consumers do not receive what they want from one supplier, they have many others to choose from (hence the competitive issue for businesses).

In this thesis, a review of existing standalone BPR Case Tools which are considered complete was conducted and further to that, the modeling of As-Is process and analysis component of a web-based BPR case tool was developed.
1.2 Definition of BPR

Hammer and Champy (1993) have promoted the definition of BPR to be “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”.

Davenport, T.H. (1993), another well known BPR theorist, uses the term process innovation, which he says, “encompasses the envisioning of new work strategies, the actual process design activity and the implementation of the change in all its complex technological, human and organizational dimensions”.

Finally, Johansson et al. (1993) provide a description of BPR relative to other process-oriented views, such as Total Quality Management (TQM) and Just-in-time (JIT) and state, “Business Process Reengineering seeks radical rather than merely continuous improvement. It escalates the efforts of JIT and TQM to make process orientation a strategic tool and a core competence of the organization. BPR concentrates on core business process, and uses the specific techniques within the JIT and TQM “toolboxes” as enablers for business processes, while broadening the process vision.”

Although, there are still many other authors with various definitions on these terms, all referring to process changes large and small, the BPR definition of Hammer and Champy (1993) is widely accepted today. This definition comprises four keywords: fundamental rethinking, radical redesign, processes and dramatic improvements.
**Keyword 1: Fundamental rethinking**

Understanding the fundamental operations of business is the first step prior to reengineering. Business people must ask the most basic question about their companies and how they operate: “Why do we do what we do?” and “Why do we do it the way we do?” Asking these basic questions lead people to understand the fundamental operations and to think why the old business processes and assumptions are still able to exist in the context of changing world. Often, old processes become obsolete when changes in the production line occurs.

**Keyword 2: Radical redesign**

“… In reengineering, radical redesign means disregarding all existing structures and procedures and inventing completely new ways of accomplishing work” (Hammer and Champy, 1993). Radical redesign seeks to identify the root cause of a problem or opportunity, and in most cases discards what is already set in place and starts with a clean sheet of paper (Pitman, 1995). Radical change is an outcome of taking a process view and departing from the old way of doing business through functional departments. Processes are horizontal while functions are vertical, processes cut across functions and functional activity feeds processes (Carr and Johansson, 1995).

**Keyword 3: Processes**

A process is a set of linked activities that obtains an input, transforms the input, and creates an output according to Carr and Johansson (1995). BPR focuses on the strategic, value-added business processes rather than on the functions, tasks, jobs, and people and product lines (Muthu et al., 1999). The strategic value-added processes deliver value to the customer (Choi and Chan: 1997) and directly touch suppliers (Carr and Johansson 1995).
Keyword 4: Dramatic improvements

Reengineering is not about making marginal improvements or modification but about achieving dramatic improvements in performance. There are three kinds of companies that undertake reengineering in general. First are companies that find themselves in deep trouble. They have no choice. Second are companies that foresee themselves in trouble because of changing economic environment. Third are companies that are in the peak conditions. They see reengineering as a chance to further their lead over their competitors (Hammer and Champy, 1993).

1.3 As-Is Processes

As-Is processes refers to the current processes that take place in an organization. Before the reengineering team can proceed to redesigning the process, they should understand and formally document the existing processes. Processes are currently invisible and unnamed because people think about the individual departments more often than the process with which all of them are involved. So, companies that are currently used to talking in terms of departments such as marketing and manufacturing must switch to giving names to the processes that they do so that they express the beginning and end states (Muthu et al., 1999).

The proposed web-based BPR4U case tool which emphasize the As-Is processes portrays how business processes are currently structured to give a picture of how work flows through the company and to have a common understanding on how the business works to establish a baseline for the company. In BPR efforts, visualizing As-Is processes
is vital for the reengineering team so that they could have a better understanding on current processes and significantly improve the processes of the organization.

1.4 Problem Statement

BPR aims to improve business processes by substantially revising their structure and by dramatically changing the way in which the processes are managed and implemented. Acquiring a clear definition of the As-Is business process is a crucial stage in any business process reengineering project. This early phase normally has to achieve a full understanding of the existing process so as to clarify its objectives and characteristics; to create a shared vision and understanding among the re-engineering team; and to have a basis for starting the redesign of the processes. To support this phase, there is a whole range of tools appearing in the market place which are traditionally used to help in the activities of reengineering process.

A number of tools and techniques have been specifically developed to capture and present process flow considered useful in reengineering the business processes. The proposed BPR4U tool is mainly targeting small and medium companies. Small and medium companies are companies whose headcount or turnover falls below certain limits. In many sectors, small and medium organizations are also responsible for driving innovation and competition (Wikipedia). The number of drawbacks for the small and medium companies are as follows:

- Mostly expensive

Based on the research done by author, it is known that, since BPR is a platform to increase a company’s long term growth as well as profit, the tool to be used for this
purpose is considered valuable and therefore most of the BPR case tools are expensive (Paul, 1999). Business Process Reengineering (BPR) efforts are reported to be failing to meet their goals at a rate of 70% (Champy, 1995). The salient observation about this statistic is that an enterprise or organization would have to face critical business issues or have considerable problems to attempt a high-risk, highly visible BPR project, given these significant chances of failing.

- **Complicated**
  BPR case tools are complicated, assuming they provide the best value for the investment of the company (Paul, 1999). Thus, it does not only focus on the exact purpose but makes the model look pretty or adds comprehensive documentation to it. This would not be suitable for small or medium companies which operate with minimal personnel, lesser users’ involvement with very straightforward workflows and does not require much input (this was identified from the survey done in End User Testing). Simple tools are easy to learn, easy to use, and very often easy to share with others.

- **Suit only for large scale companies**
  Most of the BPR case tools available in the market (such as BONAPART and Smart Draw) are targeting large scale companies which have many departments, branches, vendors and so on where they will consider having an in-depth research on existing business processes covering the whole company. This can be seen clearly from the case tools chosen by the author for comparison purposes. Process visualization and process analysis features are key to BPR tool competence (El Sawy, 1999).
1.5 Motivation

There is a necessity to develop the proposed tool in order to overcome the problem stated in the Section 1.4. The proposed BPR4U tool is practical and easy to use for small and medium organizations to visualize their existing business processes. Since it is a web-based tool, it also allows the user to have 24 hours / seven days access which enhances online collaboration where another user from the same department from different location would view the department processes. The author presents an approach to BPR that is focused on the first phase of the BPR case tool which is the modeling of As-Is processes. BPR Lifecycle consist of five phases as stated in Section 2.5 and mapping As-Is processes being the second phase utilizes an integrated set of methods for redesigning the company processes applied incrementally. This allows BPR practitioners to approach realistically their existing business processes, assess these processes with analytical components such as cost, manpower and duration and mitigate the above mentioned problems.

1.6 Aims and Objectives

This is an exploratory research that mainly focuses on fulfilling the following objectives.

- To study, analyse, critique and compare the design and development of three existing standalone BPR case tools.
- To develop the first phase of the BPR tool which is the modeling of As-Is processes and analysis component of a web-based BPR case tool which is mainly targeted for small and medium companies with straight forward analysis. The developed tool will display the flow of the business processes based on the collected data in order to support the decision making and planning by helping the top management to look at important work flows from a number of different perspectives. As such, it helps
to understand the full process flow within the organization and spot issues and opportunities to which might increase profit.

1.7 Project Scope and Limitation

This research project focuses on two things namely research on existing BPR case tools and the development of the first phase of web-based BPR tool which is the modeling of As-Is processes mainly targeting small and medium companies. The tool can be accessed online from any part of the world in order to help small and medium business to evaluate their business processes. This research project will only focus on the introduction of the case tool that is the modeling of the As-Is processes. This web-based BPR case tool implement a password protected website in order to secure the documents created by the users. This system will then be linked with other web-based system dedicated to subsequent phases of the BPR process.

Since this web-based tool is mainly developed to model As-Is processes, it will not be able to model and view To-Be processes, which is the next phase in the BPR process. In addition the user does not have the facilities to customize the font, background colour and so on. This proposed BPR4U case tool only supports single communication language which is English.

1.8 Significance of Research

There are many BPR case tools such as SmartDraw, Bonapart and Websphere Business Modeler available in the market. Nevertheless, most of these tools are standalone where the BPR team could not have access to it 24 hours / seven days from anywhere. Therefore it is vital to have a web-based BPR case tool, which would be accessed from
everywhere and at the same time it can give better visualization of the processes among the reengineering team. It is accessible to small and medium entrepreneurs. This would eliminate much of the printing works in the BPR process and allow the users to keep track on the BPR processes as well. Furthermore, this tool is developed using open source software so that there would not be any copyright restriction. Apart from all these, there has been a thorough study on three existing BPR case tools and as a result the researcher finds the pros and cons of those analyzed BPR case tools. At the same time, some features of the case tools have been integrated in the web-based tool developed.

1.9 Expected Research Outcomes

There are two main objectives to be covered in this thesis.

- Firstly, an analysis of three existing BPR case tools was carried out. This thorough analysis gives an in-depth knowledge of BPR case tools, features, various types of diagrams, advantages and disadvantages of each of the tools.

- Secondly, a prototype of a Web-based BPR Case Tool which concerns on As-Is processes was developed where the tool will display the flow of the business processes based on the collected data in order to support the decision making and planning tasks of managers. The user will only need to interact with the interface to select the task they need, and the tool will display the flow of the process. The tool being developed would be as practical as possible and very straightforward to help the small and medium companies to evaluate their business processes.
1.10 Organization of Thesis

This thesis has been organized into six major chapters and each chapter discusses specific areas.

Chapter 1: Introduction

This chapter provides an introduction to the purpose of this study. It firstly describes the definition of BPR, As-Is Processes and this is followed by research objectives, project scope and limitation of the research, significance of the research, expected research outcomes and thesis organization.

Chapter 2: Literature Review

Chapter 2 reviews the previous literature in the areas of BPR such as a brief history of BPR, the motivation of BPR, success factors and failures of BPR, BPR Methodology, BPR lifecycle, the use of BPR case tools in business organizations, previous research on BPR case tools and how does this project paper differ from previous researches and finally ends with conclusion.

Chapter 3: Research Methodology

This chapter describes the methodologies applied for fulfilling the research objectives outlined in Section 1.6 of Chapter 1 of this thesis, data collection, and the development methodologies studied and chosen for the development of this web-based BPR case tool.
Chapter 4: Case Study: Comparison of Existing BPR Case Tools

In this chapter three widely used BPR tools which are Smart Draw, Bonapart and Websphere Business Modeler were chosen to be analyzed. This consists of advantages, benefits, disadvantages, features of these BPR Case Tools. The results will be analyzed and presented in a table. Finally, the researcher will analyze the data collected from the comparison of existing BPR case tools and use the information for development of the proposed web-based BPR case tool as outlined in Chapter 5 of this research.

Chapter 5: The Development of a Web-based BPR Case Tool

This chapter describes the development of a Web-based BPR Case Tool which covers sections such as Case Tool Overview, Objectives, Scope, users and how it works. The software and hardware considerations, system requirements, system design, database design, interface design, system development, system testing, limitation of the system and future work are also discussed.

Chapter 6: Conclusion

Chapter 6 summarizes the conclusions drawn from this research, describing its research contributions, implications and limitations. In addition, recommendations for extending this research in the future are discussed.
1.11 Summary

The aim of this chapter gives the reader the basic information about Business Process Reengineering techniques and tools and ultimately come out with a web-based BPR tool which focusing on As-Is Processes called BPR4U targeting small and medium companies. A brief review of the project statement is mentioned with an illustration of the need for the BPR4U. This chapter has clearly defined the project objectives, project scope, project significance, project limitation and the outcome of the project. In addition, organization of this thesis also has been stated in order to have a clearer picture of the research project. To complete this research in an effective way, the researcher has come up with a research outline as shown in Figure 1.1 below.

![Figure 1.1 Research Outline](image-url)