Chapter 27

Business Process Modeling: Analysis and Evaluation

Gang He
Yunnan University, China

Gang Xue
Yunnan University, China

Kui Yu
Yunnan University, China

Shaowen Yao
Yunnan University, China

ABSTRACT

Business process modeling is to make use of graphics, formulas, tables and text to describe the characteristics of business process, and answer why to do, what to do, how to do. Business process modeling is the foundation of business process management. Implementation of business process management can improve the process and enhance competitiveness. In this chapter, the authors attempt to find current business process modeling methods’ advantages and disadvantages by analyzing their feature and comparison of based on series important evaluation criteria. The goal is that it provides a reference to business process modeling methods in practice.

1 INTRODUCTION

Business process modeling is a way to express business processes, and it is the important foundation of process analysis and reengineering. The main purpose of Business process modeling is to provide an effective process model and to assist relevant staff to analyze and optimize business process. Business process management (BPM) is a management method focused on aligning all aspects of an organization with the wants and requirements of clients. It is a comprehensive management method that promotes business effectiveness and efficiency while striving for innovation, flexibility, and integration with technology. Of course, Business process modeling is the first and most important step in BPM lifecycle (van der Aalst, Hofstede., & Weske., 2003). Currently, the

DOI: 10.4018/978-1-4666-1975-3.ch027
research on business process modeling methods mostly focused on the proposal and application, and lack systemic analysis and comparison among them, thus this increase the complexity of the choice of business process modeling methods.

The remainder of this paper is organized as follows. Section 2 discusses the background of this paper, such as basic concepts of business process modeling and the primary motivation of business process modeling. Section 3 represent the main evaluation criteria of business process modeling methods which validated by some experts in related fields. Sections 4 briefly introduced these modeling methods and make the corresponding analysis; Section 5 is an overall comparison of business process modeling methods. Last make an expectation and a summary of this paper.

2 BACKGROUND

A business process is a flow of activities creating value by transforming some inputs into more valuable outputs according to a certain business goal, and a business process is a collection of related, structured activities or tasks that produce a specific service or product for a particular customer or customers. And it is the step-by-step algorithm to achieve a business objective. The steps of the process are called activities. Business process modeling is the study of the design and execution of processes (Havey, 2005). According to previous studies; we can summarize the primary motivation of business process modeling into the following points:

- Help people understand the business process and go on communication;
- Support for process improvement and management;
- Increase productivity and decrease head count;
- Support automated processes;
- Simplify regulations and compliance issues.

Although, there are many types of business modeling methods and technology, business processes and process modeling methods have their respective feature and special requirements. In other words, each business process modeling method is not a completely suitable for everywhere. Thus, selecting appropriate process modeling method become especially importance. In order to achieve this goal, the evaluation criteria of business process modeling methods which reflect their feature seem indispensable.

3 MEASUREMENT CRITERIA OF BUSINESS PROCESS MODELING METHOD

The most measurement criteria of business process modeling methods have been summarized in this paper (Lu & Sadiq., 2007). The most important criteria include the following aspects:

- **Expressibility**: the expressive power of a process modeling language that is governed by its ability to express specific process requirements reflecting the purpose of process modeling and execution. A process model is required to be complete, which should contain structure, data, execution, temporal, and transactional information of the business process (Sadiq & Orlowska., On capturing process requirements of workflow based business information systems, 1999) (Sadiq & Orlowska., On correctness issues in conceptual modeling of workflows, 1997).
- **Flexibility**: flexibility can be seen as the ability to deal with both foreseen and unforeseen changes, by varying or adapting those parts of the business process that are affected by them, whilst retaining the es-
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