

## Chapter 1.3

# The Changing Nature of Business Process Modeling: Implications for Enterprise Systems Integration

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### ABSTRACT

Business process modeling (BPM) is a topic that is generating much interest in the information technology (IT) industry today. Business analysts, process designers, system architects, software engineers, and systems consultants must understand the foundational concepts behind BPM and evolving modeling standards and technologies that have the potential to dramatically change the nature of phases of the systems development life cycle (SDLC). Pareto's 80/20 rule, as applied to the SDLC, is in the process of being drastically altered. In the past, approximately 20% of the SDLC was spent on analysis and design activities with the remaining 80% spent on systems development and implementation (Weske, Goesmann, Holten, & Striemer, 1999). Today, with the introduction of the

Business Process Management Initiative (BPMI), Web services, and the services-oriented architecture (SOA), the enterprise SDLC paradigm is poised for a dramatic shift. In this new paradigm, approximately 80% of the SDLC is spent on analysis and design activities with the remaining 20% spent on systems development and implementation. Once referred to as workflow and process automation, business process modeling (BPM) has evolved into a suite of interrelated components providing significant business value. Emerging BPM technologies will be the primary vehicle by which current application portfolios transition to service-oriented architectures and Web services (Aversano, & Canfora, 2002). Business Process Management Initiative's Business Process Modeling Notation (BPMN) subgroup is currently finalizing a standardized notation for business process modeling. Although the notation is still in working draft format, system architects and designers should consider incorporating the

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concepts of BPM into their current and future systems analysis and design procedures.

## INTRODUCTION

Adaptive organizations want to be able to rapidly modify their business processes to changes in their business climate including competitive, market, economic, industry, regulatory/compliance, or other factors. Meanwhile, enterprise architects within IT organizations have long dreamed of a repository for models that are interconnected and extend to support application delivery. No single tool exists that enables enterprise architects to connect the dots between high-level models geared toward a business audience and executable code to instantiate the vision (Carlis, & Maguire, 2000).

BPM is both a business concept and an emerging technology. The concept is to establish goals, define a strategy, and set objectives for improving particular operational processes that have significant impact on corporate performance. It does not imply re-engineering all business processes; rather the focus is on business processes that directly affect some metric of corporate success. Business performance management and measurement emphasize using metrics beyond financial ones to guide business process management strategies (Delphi, 2001). Metrics related to customer value or loyalty are examples. Business process modeling is becoming the central point of organization for many systems. BPM as a concept is not new; multiple process management methodologies such as Six Sigma and Lean Manufacturing have existed for years. However new BPM technologies are fueling a renewed interest in process thinking (Ettlinger, 2002). New BPM technologies promise business modelers and managers a visual dashboard to manage and adjust, in real time, human and machine resources, as well as information being consumed as work progresses.

The business and IT worlds are taking more strategic and holistic views of IT and how it sup-

ports the business. IT strategy, business process improvement, and IT architecture are experiencing a renaissance. Enterprise architects have tackled the technical architecture effectively. Now, enterprise architects are looking to expand their efforts into the business architecture space. Enterprise business architecture is the expression of the enterprise's key business strategies and their impact on business functions and processes (Adhikari, 2002b). Business architecture efforts in most organizations are limited to thematic project-level initiatives. Thematic business architecture artifacts generally fail to evolve once the projects are complete because little perceived value exists for keeping business architecture content alive. However, emerging standards show promise in keeping business architecture and associated artifacts alive to serve as key business strategy enablers.

The IT world is moving more toward a model of integrating pieces or components, versus building from scratch (Adhikari, 2002a). Organizations are looking to strategically optimize, automate, and integrate key processes to provide seamless service to more demanding customers in a multi-channel world. To do this effectively, systems must be integrated at the process level as well as the data level. Integrating systems at the process level has been a challenge which, when unmet, leads to data duplication and inconsistency and functional overlap (i.e., inefficient processes/processing) (Reingruber & Gregory, 1994). Many organizations are embarking on process improvement exercises to increase organizational efficiency or effectiveness.

These efforts go by many names, including industrial engineering, ISO certification, Six Sigma, enterprise business architecture (EBA), business process improvement (BPI), business process re-engineering (BPR), and lean thinking, to name a few. Most of these techniques involve visual modeling to capture the current state and validate improved future-state design. Several notations exist for visual process modeling (e.g.,

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