The Risk Assessment Enhancement Process at the Federal Deposit Insurance Corporation

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INTRODUCTION

Government agencies often face increasing challenges to collect, process and analyze voluminous data from corporate and individual filers. Specifically, supervisory banking institutions have appreciated the imperative role of technological innovations to facilitate data processing to analyze business and financial risks of their bank filers. With the advancement in electronic reporting technologies and the intricacies of risk management process, bank regulators are challenged by the complexity of such process to provide better data that will support and inform the bank examination process. Bank regulators interested in the development and expansion of the risk assessment systems face some technical and organizational problems. Such problems are caused by the inherent complexity of the data in bank filings, the proliferation of compliance requirements, and the growing data security concerns, which can all hamper the pace of system development and the generation of quality data (Burton & Seale, 2005; Raghavan, 2007). One of the popular methodologies that have been adopted to overcome such challenges is the Unified Rational Unified Process (RUP®) system development methodology.

In this chapter, a leading government agency represented by the Federal Deposit Insurance Corporation (FDIC) has adopted the RUP® methodology to enhance its risk assessment process. The FDIC's decision was driven by the practicality and agility features of the RUP® and its compatibility with the agency's reporting systems. Specifically, the agency decided to use RUP® to develop its existing Examination Tool Suite (ETS), which supports the main structure of the risk assessment process at the agency.

The RUP comprises four important phases, which characterize the process of developing a system from inception to transition into the target user community. These phases have been explained in this chapter in the context of the FDIC's ETS development process. To better understand the agency's motivation to develop its risk assessment process, the chapter discusses the main characteristics and functions of the ETS application. The agency's main motivation to develop ETS application and choose RUP® to accomplish that goal are also explained. The rest of the chapter discusses the project development phases, challenges, realized benefits and learned lessons. Practical implications and concluding remarks are presented at the end of the chapter.

BACKGROUND

Organizations can select from a variety of software development methodologies. A software development methodology defines the process, documentation and techniques that could support the system

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developers to create and implement a new information technology system (Avison & Fitzgerald, 2006). One of the most notable methodologies in software implementation and development is the Rational Unified Process (RUP®). RUP is an agile process framework that has been created by Phillippe, Kruchten, Ivar Jacobsen and others at Rational Corporation and used in many software implementation projects (Jacobson, I. Christenson, M., Jonsson, P. & Overgaard, G., 1990; Kroll & Kruchten, 2003). The agility component of RUP® framework provides a detailed description of the process requirements which are needed for an agile methodology, often characteristics by its adaptive, straightforward, incremental, and cooperative features (Callahan, 2006). In addition, it is a software engineering process framework that could be used as a best practice for supporting software development projects. The structured approach of RUP® allows system developers to assign tasks and create milestones for deliverables based on predicable schedule and budget (IBM, 2006).

The Rational Unified Process methodology has four advantages. First, the RUP® improves the productivity of the software development team. The process is well-structured and document and offers and allows the development team members to have quick access to the process guidelines and templates, which creates a strong knowledge base for all the members (RUP, 1998). Second, RUP® methodology provides a framework that can be adapted according to the size and complexity of the operating system and the experience and skill of the development team (Jacobson, I., Booch, G. & Rumbaugh, J., 1999). Third, the use of the RUP® methodology is based on utilizing key best practices, which include the iteration of software development and the ability to verify the software quality, monitor changes, and develop risk mitigation strategies (RUP, 1998). Fourth, RUP® elevates the level of system abstraction by reusing existing assets, which subsequently reduce its complexity and project documentation (Geambasu, C., Jianu, I., Jianu, I & Gavrila, A., 2011).

On the other hand, RUP® has some disadvantages. The increased level of project complexity amplifies the burden of financial, operational and human resources of the organization. The iterative nature of the framework could cause project delays because each phase of the project has to be done methodically and consistently, which could make the project less affordable and more difficult to manage (Callahan, 2006).

Previous research indicates that there are several factors the affect an organization's decision to adopt RUP® methodology. Geambasu et al. (2011) emphasize the importance of clarifying the initial systems requirements with the client prior to the deployment of development work to fulfill all the client's needs and preferences. The researchers also suggest that the first phase, Inception, provides an opportunity to draw realistic initial estimation of costs and development time of the project. In addition, the researchers report that the incorporation of required changes and the production of multiple 'versions' of the system resulting from iterations during the development process are important factors that could more or less expedite such a process. Finally, the authors suggest that the system development costs, the duration of the delivery time of the final version of the system, the system complexity and communication between the client and system developers are significant factors that companies should consider carefully before adopting RUP® methodology.

The RUP System Development Life Cycle process and Phases is presented in Figure 1: inception, elaboration, construction, and transition. Each phase contains one or more iterations that cover a series of disciplines. A discipline is "a collection of activities that are related to a major area of interest" (IBM Corporation, 2006). Figure 1 depicts two axes. The horizontal axis represents the time and showcases the dynamic evolution of the process as it is performed. It is expressed in terms of phases, iterations and milestones. The vertical axis represents the description of the disciplines in terms of activities and workflows.