Chapter 82

Business Intelligence and Agile Methodology for Risk Management in Knowledge–Based Organizations

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ABSTRACT

In this highly technology - dependent, knowledge- based economy, the causes for failure of most software development projects are related to rapid technology changes, in-flux business requirements, or failure to tackle risk. Accordingly, risk management plays significant and crucial role in organizations' response to this rapidly changing economy. Risk management process is illustrated in four main steps: identify the risk, analyze the risk, treat the risk and monitor the risk. This chapter discusses and explores the role of business intelligence and agile methodology to manage risk effectively and efficiently. It explores the risk management traditional tools that are commonly used, the role of business intelligence in risk management, and the role of agile methodology in risk management.

INTRODUCTION

Project failures have been one of the most critical concerns of managers over the past decades. So many searches have conducted to investigate the different causes of these failures. In 1998, the cost of failed projects in the U.S.A only has been evalu-

ated at $85 billion. Past projects showed that most of the encountered problems and difficulties were actually predictable. According to (Cerpa, 2009) study of 70 failed projects, risk has a noticeable role in projects failures.

As a consequence, risk management is more than a need. So many tools and techniques have been used during the past decades to manage risk but those previously used tools are no efficient

anymore due to the fast pace of this century. Decisions have to be made in a matter of minutes or sometimes seconds so there is a must of getting benefits of the huge amounts of stored data in data warehouses using intelligent techniques.

This chapter investigates the role of business intelligence and agile methodology in managing risk. Firstly, the chapter gives an overall view of the concepts of risk and risk management process and why there is a need for risk management. Then the chapter lists in some details the traditional tools that are most commonly used in managing risks. It also explores the role of business intelligence in Risk Management Process and shows some tools that are effectively used in managing risk. Finally the chapter ends up with the role of agile in managing risk.

RISK MANAGEMENT (LITERATURE REVIEW)

Why Need Risk Management?

Risk can be defined as Hazard; danger; peril; obstacles; exposure to mischance or harm; venture (Canfora & Troiano, 2002). Dwaikat & Parisi-Presicce in (2005) defined risk as the probability of selfish use of software vulnerabilities. Such selfish use often causes a loss, either tangible or intangible, to the project owner. Risk according to Biswas, Debelak, & Kawamura (1989), implies a measure of some possible loss. Therefore, understanding risks and threats in any business is the first step to make a good decision. According to OXFORD dictionary risk can be defined as:

Chance or possibility of danger; the possibility that something unpleasant will happen.

Dwaikat & Parisi-Presicce (2005), classify risks into three types: project risk, like the risk of cost and time scale, technical risk, when the project doesn't meet one or more of its functional requirements, and risk to life that causes death or breakdown to project. Regardless the type of risks that have to be faced, there are so many techniques and tools to do that in this constantly changing economy.

Risk in general is a problem that could cause some loss or threaten the success of our project, but which hasn't happened until now and we work to keep it away. For the field of business, software- related risks can be defined as the multiple undesirable events that may occur.

Risk Management is a collection of methods or techniques that aim to minimize or reduce the effects of project failure (Addison, 2002) which match Crossland, Williams & McMahon(2003) definition of risk management which is a "coordinated activities to direct and control an organisation with regard to risk".

Risk management and measurement are crucial for today's organizations survival. The implementation of risk management system is one of the most crucial challenges that organizations might face in this rapid changing world in order to identify, analysis and prevent business exposure. In another words risk management benefits can be: warnings at the early stages to avoid loss, triggers or indicators for future opportunities and better decisions making process.

Risk Management Process

Due to the importance of risk management field, there are so many standards that are specified for this field like ISO 17799 and AS/NZS 4360, others deal with risk management as part of project management standard or IS development process standard as CMMI (Ewer & Mustafa, 2008). The majority of related standards approximately agree on four phases to manage risks (Crossland, Williams, & McMahon, 2003). In this context the first three phases are the essential ones while the fourth one forms the umbrella activity of risk management process (Raza, 2009) (see Figures 1 and 2).

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