Chapter 15
Towards an Elastic Risk Management Methodology by Using Business to Software Unified Process (BSUP)

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ABSTRACT
Riskit is a now a world-wide risk management methodology deployed by a number of expert software engineering communities since its first rollout by Kontio et. al, 1994,1995,1996,1997 and 1996. Business to Software Unified Process (BSUP) has been the proprietary Business to software modeling approach introduced for the first time in 2003 (Nasiri et. al, 2004 and 2007). In this paper the goal is apply the capabilities inherent in BSUP to optimize Riskit process model. BSUP, UML 2.0 and Fuzzy Logic Concepts are widely used when ever the model is to be made.

INTRODUCTION
The Riskit method for software engineering risk management (Charette,1989) is widely in use because of its sound theoretical foundation and its major focus on qualitative cognition of risks before their possible quantification (Carr et. al, 1993), in addition to its capability to provide a defined process for conducting risk management. Today, it is being supported by various tools, techniques and also rich guidelines. But the fascinating feature may be that the use of Riskit does not preclude the use of other risk management approaches (Kontio et. al, 1994, 1995, 1996 and 1997). Since the early days of software development (Basili et. al, 1989 and 19921992), risks had been perceived inevitable because of various unanticipated problems which cause development team to go over budget, miss deadlines, or finally deliver less than satisfactory artifacts and so on.

Although risks neither could be eliminated nor might be ignored, one may strictly monitor and manage them to control and mitigate their potential

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harmful effects. Reflective and proactive methods 
are alternatives to achieve the Goal. There are a 
few shortcomings which make the risk manage-
ment process so sophisticated. The shortcomings 
of current methods are as follows:

- Risk (MacCrimmon et. al, 1986) is very 
seldom a crisp straightforward concept 
and mostly it is perceived as a non deter-
ministic concept which is quite close to 
Fuzzy Logic concepts (Harris, 2006) and 
measures (Ganesh, 2006). This is also true 
while the impression of risk on various 
stakeholders is measured.

- Risks may influence each others in differ-
ent ways. Risks may strengthen or dimin-
ish each other. This feature may make a 
very complicated scenario while analyzing 
the potential effects of risks.

- Clarity of methods and cost effectiveness 
of many current risk management methods 
are totally in doubts since they are costly 
perceived as complex or too costly to use.

BACKGROUND

Riskit Methodology

The Riskit method is considered to be a suitable 
solution to address the issues such as those listed 
above. Its main characteristics can be described 
by the following principles.

1. The Riskit method provides precise and 
unambiguous definitions for risks.

The common definition of risks, either by 
dictionaries or every day usage, associate several 
different meanings to risk. It can refer to a pos-
sibility of loss (Anonymous, 1992), the actual loss 
that would result if the risk occurs (Anonymous, 
1992), a factor or element that is associated with 
a threat (Anonymous, 1992), or a person that 
contributes to the possibility of loss (Anonymous, 
1995). The dictionary definitions for risk are so 
broad that it is fair to define risk as anything that 
is related to the possibility of loss. Clearly, there is 
some value in having such a broad and encompass-
concept to facilitate initial discussion about 
risk. However, we believe that this wide range 
of meanings associated to the word “risk” can 
also prevent adequate precision in more detailed 
analysis or risks unless this ambiguity is explicitly 
addressed and removed.

2. The Riskit method results in explicit defini-
tion of objectives, constraints and other.

Risk is a relative concept; its definition de-
pends on expectations that are associated with a 
situation. In order to analyze risks, it is necessary 
to formalize the expectations as well as possible. 
When expectations are recognized and defined, we 
refer to them as goals. While some goals cannot 
be stated precisely, at least they should be identi-
fied and documented as well as the information 
available allows. The Riskit method contains an 
explicit step and supporting templates to assist in 
the goal definition.

3. The Riskit method is aimed at modeling and 
documenting risks qualitatively.

The Riskit method provides conceptual and 
graphical tools to model different aspects of risks 
qualitatively, instead of requiring quantitative 
estimation of risk probability and impact to take 
place early in the project. Given the difficulty of 
these estimations and the often ambiguous inter-
pretations of risks – the margins of error in risk 
quantification are easily high. By emphasizing 
the qualitative understanding of risks, there is a 
better basis for understanding and communicat-
ing about risk.