

# Collaboration Methods and Tools for Operational Risk Management

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## INTRODUCTION

Over the past years, various methods and tools have been used by financial institutions (FIs) to support operational risk management (ORM) (Brink, 2002). ORM supports decision-makers to make informed decisions based on a systematic assessment of operational risks (Brink, 2003; Cumming & Hirtle, 2001). By the end of the 1990s many FIs increasingly focused their effort on ORM. This was mainly motivated by the volatility of today's marketplace, costly catastrophes (e.g., Metallgesellschaft, Barings, Daiwa, Sumitomo, Enron, Worldcom) and regulatory-driven reforms such as the new Basel accord (Grinsven, Ale, & Leipoldt, 2006).

The main benefits of ORM are improving performance, reducing operational losses, enabling a more efficient use and allocation of resources, preventing major business disasters, optimizing the allocation of capital, increasing the chance of success, improving decision-making and creating a shared understanding for Operational Risk (OR) (Brink, 2002).

FIs often use loss data and expert judgment to estimate their exposure to operational risk (Brink, 2002; Cruz, 2002). Utilizing expert judgment is usually completed with more than one expert individually (often referred to as individual or self-assessments) or group-wise with more than one expert (often referred to as group-facilitated self-assessments). While individual self-assessments are currently the leading practice, the trend is more toward group-facilitated self-assessments. As a result, there is a need to support these group-facilitated assessments using e-collaboration methods and tools. However, there are a number of difficulties that financial institutions face which result in research issues that need to be bridged. The major difficulties are closely related to an effective, efficient and satisfying

identification and estimation of the level of exposure to OR (Young et al., 1999).

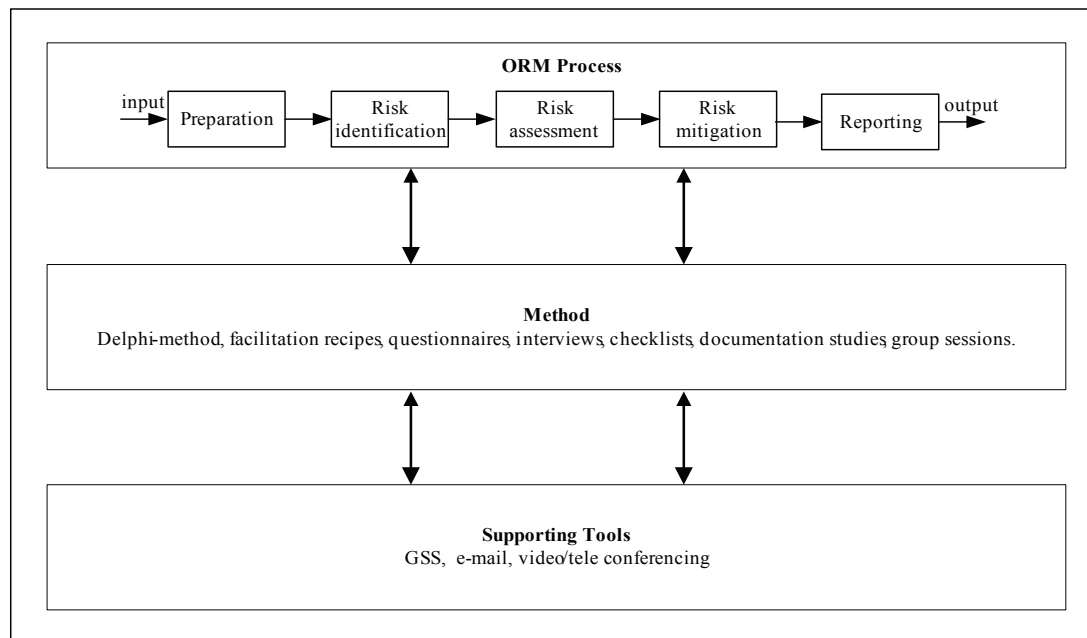
In this article, collaboration methods and tools are discussed for supporting multiple expert judgement utilized in ORM. We also present the main research issues. First, an overview of ORM will be provided by discussing the main phases of ORM. Second collaboration methods and tools are presented that can be used to support the multiple experts' judgment and elicitation process and the role of experts is discussed. Finally research issues are discussed that need to be solved to leverage the full advantages of collaboration methods and tools as well as future developments.

## BACKGROUND

An operational risk can be defined as the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events (RMA, 2000). The management of OR involves a multitude of techniques that serve two main purposes: loss reduction and avoidance of catastrophic losses. Expert judgment is extremely important when internal and external loss data does not provide a sufficient, robust, satisfactory identification and estimation of the financial institutions exposure to OR (BCBS, 2003; Brink, 2002; Cruz, 2002).

Expert judgment is defined as the degree of belief, based on knowledge and experience that an expert makes in responding to certain questions about a subject (Clemen & Winkler, 1999; Cooke & Goossens, 2004). Expert judgment is increasingly advocated in various sectors for identifying and estimating the level of uncertainty about risk (Bigün, 1995; Kaplan, 1990; Muermann & Oktem, 2002). Expert judgment

Figure 1. Overview of collaboration methods and tools for ORM



is often utilized by FIs to perform operational risk self-assessments. However, despite the fact that they use self-assessments, very few deploy them to provide them with a sufficient and satisfactory estimate of their exposure to OR (Finlay & Kaye, 2002).

Collaboration methods and tools can be used for the combined purposes of process improvement and knowledge sharing (Kock & Davison, 2003). Collaboration methods and tools exist in various forms. Figure 1 shows an overview of methods and tools, focusing on expert judgment utilized in ORM. The figure consists of three layers: a process layer, a method layer and a supporting tools layer. The *process* layer shows how the five main phases preparation, risk identification, risk assessment, risk mitigation and reporting phase, as proposed by Cooke and Goossens (2000), coincide with each other. Every phase is the input for the next phase resulting in an accurate estimate of exposure to OR as final output. The *method* layer shows the methods that can be used in the different phases of the expert judgment process. The *supporting tools* layer shows the supporting tools which can be used to support the methods used in the ORM process. The method and tool layer are discussed briefly in the following paragraphs.

E-collaboration is defined as collaboration using electronic technologies among different individuals to accomplish a common task (Kock, 2005). E-collabora-

tion technologies are increasingly used to support expert judgment activities (Brink, 2002; Cruz, 2002; Finlay & Kaye, 2002). E-collaboration technologies can support each of the five phases of the ORM process.

A group support system (GSS) is an electronic technology that supports a common collection of group tasks such as idea generation, organization and communication. GSS aim to improve (collaborative) group work (Vogel et al., 1990). Improvements are achieved by using information and communication technology to further structure multiple experts' exchange of ideas, opinions and preferences (Fjermestad & Hiltz, 2001; Turban et al., 2001). Turban and Aronson (2001) present an overview of GSS tools that can be used for supporting idea generation, idea organization, prioritizing, policy development and knowledge accumulation and representation. Table 1 presents a number of these GSS tools can be used in the ORM process to support the multiple experts (Weatherall & Hailstones, 2002).

Huber (1980) describes facilitation recipes as a detailed re-usable script that can be used for a group task such as brainstorming. In essence, these recipes help a facilitator to organize group communication and coordinate problem solving activities (Hackett, 1993; Hunter, Bailey, & Taylor, 1992; Ocker, Hiltz, Turoff, & Fjermestad, 1997). They are aimed at further increasing the effectiveness, efficiency and satisfaction of the collaborative group meeting (Grinsven, 2006). In the

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