

Principles for the Sound Management of Operational Risk at a Financial Service Provider

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Agenda



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Risks related to the core business of Munich Re



Munich Re's declared objective is to turn risk into value ...

... a paradoxical idea for many who shy away from the large individual and catastrophe risks **we carry***).

- By identifying and then analyzing a risk in terms of quality and quantity, we as insurers can demystify risks and carry many that others consider unacceptable.
- With a good portfolio diversification a serious impact by single risks on our overall business result is less likely.

Through this professional approach, we turn risk into opportunity and create sustained value – for the individual, for society, for our clients and naturally for us as an enterprise, by which we also mean our employees and shareholders.

*) In the business year 2005 our **underwriting risk** led to net expenses for claims and benefits of €m 33,351 (net premiums written €m 36,210) for Munich Re Group.

Investments mainly serve to cover underwriting provisions

Therefore, the main focus of our investment strategy is to ensure that economic factors influence the value of our investments and the value of the underwriting reserves and liabilities in the same way.

We only make investments in assets from which we expect an appropriate return, at the same time attaching great importance

- to security,
- **sufficient liquidity,**
- a targeted diversification.

Our **main investment risks** are market (and credit) risk concerning our

- fixed-interest securities with a market value^{*)} totaling €bn 100.6
- equity investments with a market value^{*)} totaling €bn 25.1
- and real estate holdings with a market value^{*)} totaling €bn 7.1

^{*)} as at 31 December 2005

As a consequence we apply a holistic management of insurance and investment risks

Based on our **internal risk model** we analyze how certain risk scenarios affect

- the results of the business segments and
- the investments of the reinsurance group.

With appropriate investment and hedging strategies we significantly diminish mismatched risks between assets and liabilities.

Additionally, in **risk assessments** risk managers examine the relevant risks of their business unit.



Regulatory framework for financial service providers



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German financial service providers are subject to the supervision of BaFin

It is the proclaimed objective of BaFin to ensure a functioning and stable financial system in Germany which bank customers, insured and investors can trust.

The BaFin monitors and secures the **solvency** of

- banks,
- financial service institutes, and
- insurance companies.

With Basel 2 and Solvency 2 regulatory capital requirements were / are revised

As a result capital requirements will be much closer aligned with the risks carried and quantitative and qualitative methods of supervisors become harmonized.

Basel 2 → Banking

- Minimum capital requirements for
 - Credit risk (210 pages)
 - Market risk (30 pages)
 - Operational risk(15 pages)
- Minimum requirements for risk management
- Disclosure requirements (10 pages)
- “Solvabilitätsverordnung” (SolvV) coming into force on 1.1.2007

Solvency 2 → Insurance

- Minimum capital requirements for
 - Underwriting risk
 - Investment
 - Operational risk
- Minimum requirements for risk management
- Disclosure requirements
- EU framework directive scheduled for 2007 - coming into force nationally by 2010



With Basel 2 operational risk has to be managed as a risk category of its own

The following definition, although elaborated for the Basel Accord for banks, has become the **standard definition** within the financial community.

Operational risk is defined as “the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events.”

- **Legal risk** is considered to be part of it.
- It excludes the financial consequences of **business or strategic** decisions.*)
- Ultimately, the **reputation** of the firm is at stake, although this is not considered to be a risk category by itself. *)

*) In the OpRisk Definition of the German SolvV this exclusion is not explicitly stated

An attempt to file project risk into operational risk



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Project risk can be understood as a subset of operational risk

- A project is a temporary endeavor undertaken to create a unique product, service, or result. (PMBOK Guide 3rd ed. 2004)
- In financial services project delivery encompass the development and implementation of new:
 - Products
 - IT-Systems
 - Organizational structures and processes
 - Mergers and acquisitions or sale of a subsidiary
- Generally speaking a project risk event would be any event that significantly deviates from the project constraints or even leads to a significant deviation from the defined objective.

In corporate governance view, project risk is the risk of loss resulting from inadequate or failed internal [project management] processes, people and systems or from external events.

Principles for the effective management of operational risk



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The sound practices provide a framework for the effective management and supervision of OpRisk ...

... and outline a set of principles for use by banks and supervisory authorities when evaluating operational risk management policies and practices.

Part I: ***Appropriate Risk Management Environment***

Describes the responsibilities of the board of directors, senior management and internal audit.

Part III: ***Role of Supervisors***

Describes what supervisors should require from banks and how to evaluate if the requirements are met.

Part IV: ***Role of Disclosure***

Describes what banks should disclose to allow market participants to assess their approach to operational risk management.

The „Sound Practices for the Management and Supervision of Operational Risk“ were developed by the Risk Management Group of the Basel Committee on Banking Supervision



OpRisk 'Management' means 'identification, assessment, monitoring and control/mitigation' of risk.

Therefore, the following principles represent the core of the sound practices.

Part II: *Risk Management*

4. Banks should **identify** and **assess** the operational risk inherent in all material products, activities, processes and systems. [This also applies to new products, etc.]
5. Banks should implement a process to regularly **monitor** operational risk. There should be regular **reporting** to senior management and the board of directors.
6. Banks should have policies, processes and procedures to **control and/or mitigate** material operational risks.
7. Banks should have in place **contingency and business continuity plans**.

The „Sound Practices for the Management and Supervision of Operational Risk“ were developed by the Risk Management Group of the Basel Committee on Banking Supervision



Part II of the sound practices suggests a combination of top-down prioritization and bottom-up identification

Senior manager

- defines the objects of investigation for his area of responsibility: products / processes / systems / activities / organizational units
- prioritizes within the object of investigation

Staff responsible

- depends on the object of investigation
- prioritized objects of investigation are analyzed bottom-up for risks by: product manager / process manager / system manager / project manager / manager of the unit

Preconditions

Clear and well documented responsibilities, product catalogue, process catalogue, ...

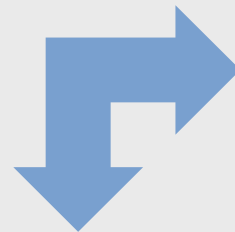
Methods for OpRisk Management

- Identification
- Analysis
- Control
- Monitoring
- Reporting



What you do not know you cannot manage

- a) What is the objective and restrictive conditions of the analyzed process / product / system / activity / organizational unit?
- b) What event represents a significant deviation from the objective / breach of condition?
- c) Could the deviation have a **significant negative financial / reputation impact**?



No, then do not bother

Yes, then analyze further



Systematic collection of risk data enhances possibilities of analyzing the risk portfolio.

- a) What kind of **event type** is the deviation from the objective?
- b) What might **reasonably cause** that a significant deviation from the objective / breach of condition within a specified period (e.g. 1 year) takes place?
- c) Which **products** are affected
- d) What kind of **financial impact** is likely?
- e) Is another unit causing the risk? Do you need information from the other unit to assess the risk? Can the risk spill over into another unit?

The information is the basis for assessing the risk with respect to probability and severity as well as.

Assessing the probability and severity of a risk

Different risks vary in their frequency patterns. In order to make high frequency / low severity risks comparable to low frequency / high severity risks they are assessed over a specified space of time:

- a) Assess the **loss amount** over the specified space of time
- b) Assess the **frequency** how often a year with this loss amount occurs

Methods:

- Qualitatively: low - medium – high – disastrous
- Semi-quantitative in predefined bands
- Quantitative

Auxiliary means:

- Internal or external loss data history complemented with a prospective view on conceivable developments / trends
- Scenario analysis (worst case year – typical year)



Identifying additional measures and assessing the efficiency of risk reduction

How efficient are the **existent** measures?

Is there need to further reduce the risk?

Are there other **potential** measures to replace or to amend existing ones?

Does the implementation of the new composition of measures make sense under cost-benefit-aspects?

Decide or (depending on competence) request decision on implementing potential measures. Potential measures become **planned** measures.

Develop and implement planned measures.





Regular monitoring activities offer the advantage of quickly detecting and correcting deficiencies

Monitor the evolvement of risks

Using **key risk indicators** (leading indicators referring to main cause of risk) to reveal changes in the risk situation. This is especially important in the case of risk with high (uncertainty with respect to) loss potential.

Monitor the control measures

- Implementation of new measures according to agreed time and quality
- Effectivity of existent measures by using key performance indicators (lagging indicators)



Reporting risk information to senior management and BoD supports proactive management of OpRisk

Reports should fully reflect any identified problem areas and should motivate timely corrective action on outstanding issues.

Senior management

should receive regular reports on Operational Risk containing information on

- OpRisk losses by event type and main risk driver (causes), ...
- Material OpRisks and the current status of the key risk indicators

The board of directors

should receive sufficient higher-level information to enable them to understand the bank's overall operational risk profile and focus on the material and strategic implications for the business.

Reports can be used to improve existing risk management performance as well as to develop new risk management policies, procedures and practices.



Dimensions for the assessment of risks

