

# SAS Fórum Portugal Lisboa 2006



## Gestão de Risco Risco Operacional

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## Desenvolvimento do Risco Operacional



## Contexto histórico

<b>Empresa</b>	<b>Actividade</b>	<b>Ano</b>	<b>Perda (milhões \$)</b>
Daiwa Bank – NY	Comercio de não autorizado de obrigações devido a fraco controlo de gestão	1984-95	1,100
Suminoto – Londres	Fraude, Falsificação e comercio não autorizado	1986-96	1,700
Credit lyonnais	Mau processo de empréstimos	1980-99	29,000
US banks Corporation	Fraude de cheques	1993	12,000
Proctor&Gamble	Má gestão	1994	157
Barings	Falta de controlo, Fraca segregação de funções	1995	1,600
eBay	Falha tecnológica no sistema de leilões	1999	5,000

## Definição de Risco Operacional

*“the risk of direct or indirect losses resulting from inadequate or failed internal processes, people and systems or from external events” –  
Basel II*

*“Operational risk is the potential for adverse fluctuations in the profit and loss statement or the cash-flow of a firm due to effects that are attributed to customers, inadequately defined controls, system or control failures, and unmanageable events.”*

## O que é a Gestão de Risco Operacional



# Objectivos da Gestão de Risco Operacional

## Objectivos gerais

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**Aumentar a consciência ao risco**  
**Análise pró activa do risco**  
**Medição de performance baseada no risco**

## Objectivos especiais

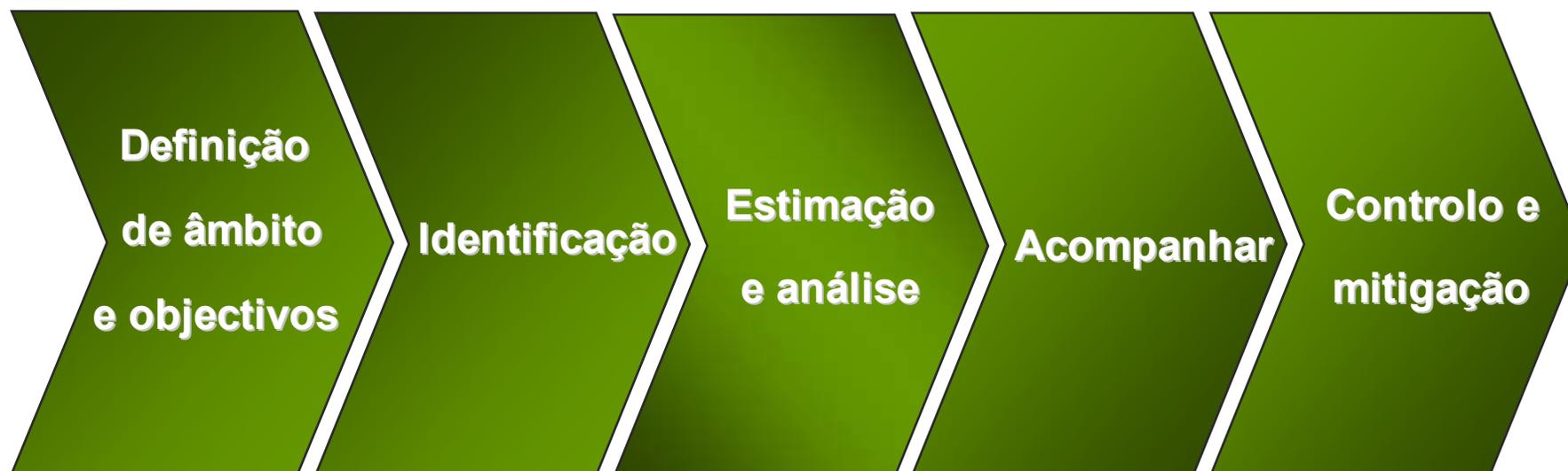
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**Melhorias na eficácia operacional**  
**Mudanças nos processo de controlo**  
**Gestão de limites**

## Múltiplas disciplinas



## As 5 fases da Gestão de Risco Operacional



## As 5 fases da Gestão de Risco Operacional



**Definição  
de âmbito  
e objectivos**

Pressões Regulamentares  
Fusões e aquisições  
Integração de “Best practices”  
Agregação de riscos  
Novos produtos e serviços  
Alocação de recursos



▪ **SAS Intelligent Solutions**

## As 5 fases da Gestão de Risco Operacional



Identificação de processos e recursos críticos

Análise e descrição dos processos

Avaliação dos processos

Análise de dados históricos

Análise de frameworks estratégicas

Análise das melhores práticas da industria

Recolha de dados

▪ SAS Strategic Perfor. Manag.

▪ SAS ABM

▪ SAS OpRisk Monitor

▪ SAS OpRisk Global Data

▪ SAS Intelligent Architecture

▪ SAS Analytical Intelligence

## As 5 fases da Gestão de Risco Operacional



### Estimação e análise

Modelos estatísticos  
Extreme Value Theory  
Regional Frequency Analysis  
Técnicas Bayesianas  
Processos estocásticos  
Modelos não lineares  
Operational VaR  
Testes de stress e análise de cenários

- 
- SAS OpVaR
  - SAS Stat
  - SAS Forecast Server
  - SAS Enterprise Miner
  - SAS Risk Dimensions

## As 5 fases da Gestão de Risco Operacional



Recolha de dados  
Categorização do risco  
Relatórios internos externos

- SAS OpRisk Monitor
- SAS OpRisk Global Data
- SAS Intelligent Architecture
- SAS Strategic Perfor. Manag.
- SAS Financial Solutions

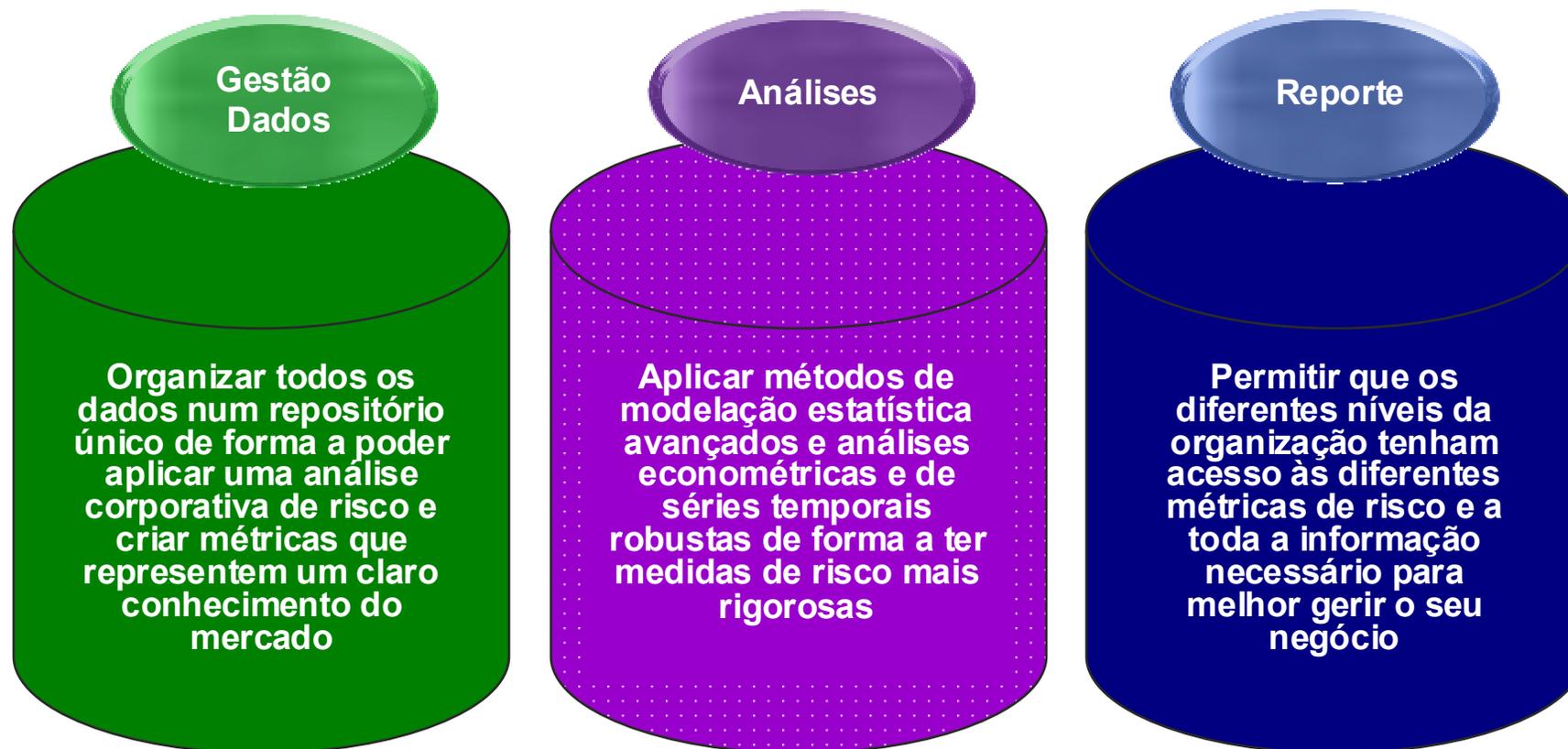
## As 5 fases da Gestão de Risco Operacional



Gestão de factores  
Previsão de perdas  
Prevenção de perdas  
Controlo de perdas  
Redução de perdas / Gestão contingências  
Financiamento de risco

- SAS ALM
- SAS AML
- SAS Forecast Server
- SAS Quality Control
- SAS Operations Research
- SAS Fraude Detection
- SAS Human Capital Mang.

## Os 3 pilares dos Sistemas de informação de Gestão de Risco Operacional



# Recolha de dados

**SAS OpRisk Monitor** *The Power to Know.*

Home | Loss Data | Central Self Assessment | Key Risk Indicators | Business Structure | Financial Data | Users and Roles | Help

### Edit Loss/Gain

Save Stop Editing This Loss Delete Cancel View History Print

---

#### Summary Information

Title:  Country of Incident:  Reference Number:

Description:

Financial Status:  Settled  Provisioned  Estimate  Near Miss

Loss Type:  Loss  Gain

Shared Loss:  Yes  No

Event: [Insurance Policy Creation](#)

Source Reference:  Source Name:

Operational Component of Credit Loss?:

Business Line:  Internal  Regulatory

Event Risk Category:  Internal  Regulatory

- Worldwide Insurance Services
  - WIS Life Insurance and Benefits Group
- Clients, Products & Business Practices
  - Improper Sales/Client Practices
  - Deception and concealment

Internal Organization:  Sales  Commercial  Mortgage

Causes:

Support Function:  Account Management  Opening New Accounts

Validation Workflow:

Current Editor:

Monetary Breakdown in EUR: Original Loss Amount: 0.00, Adjustments: 0.00, Net Loss Amount: 0.00, Insurance Recoveries: 0.00, Final Loss: 0.00

Key Dates: First Date of Loss: 6/1/98, Last Date of Loss: 11/16/98, Date of Discovery: 1/8/99

Actions	Entered On	Financial Status	Effect Type	Ledger Code	Title	Amount Type	Currency	Amount	Amount in EUR
	2/12/04	Settled	Write-Down		Loss for Met Life	Loss	USD	25,000,000.00	

Add Loss or Gain...

Insurance Recoveries

Actions	Entered On	Title	Currency	Recovery Amount	Amount in EUR
Nothing found to display					

Add Insurance Recovery...

Save Stop Editing This Loss Delete Cancel View History Print

**SAS OpRisk Monitor**

Home | Loss Data | Issues and Action Plans | Business Structure | Financial Data | Users and Roles

### Assessment Questionnaire

Edit Send for Validation Done

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Reporting Period: Name: Q1 2005  
Starting Date: 01/01/2005  
Ending Date: 31/03/2005 [View History](#)

Management Organization:  Internal Support  Information Systems

Validation Workflow:

#### Questions

1. To what extent is system security enforced in your department?

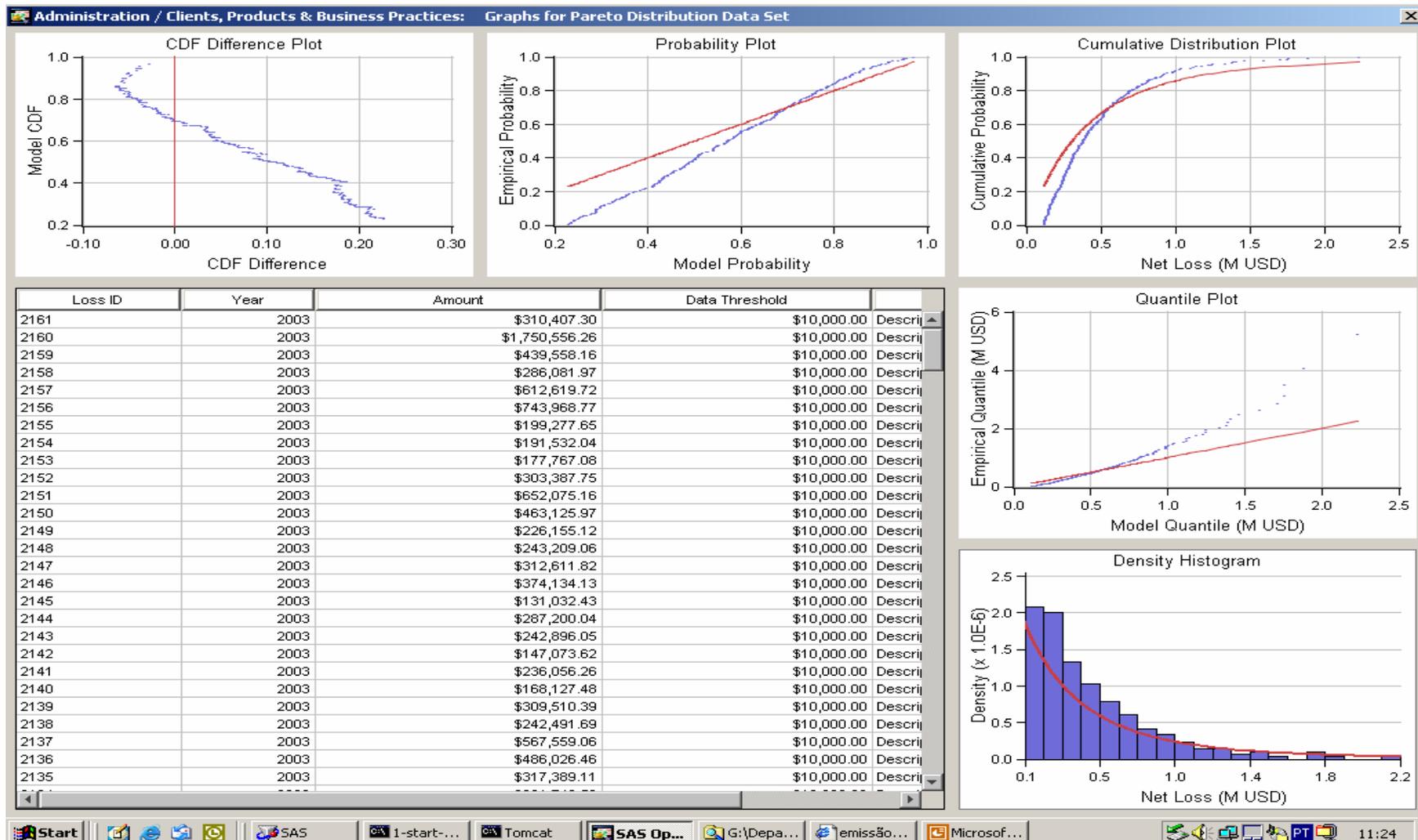
#	0	1	2	3	4	5	6	7	8	9
No Answer										
	There is no system security enforced on any workstations. No user IDs nor passwords are required to access any system in the department.			User IDs and passwords are required on all computer workstations. Users are required to change their passwords every 12 months.			User IDs and passwords are required on all workstations. Users are required to change their passwords every 3 months using passwords that are at least 8 characters and numbers. All workstations are automatically logged out if left idle for more than 30 minutes.			

\* Answer Justification

2. To what extent are staff members trained in skills such as presentation, product knowledge, software, etc.?

#	0	1	2	3	4	5	6	7	8	9

# Análise de dados



# Relatórios

**SAS Risk Intelligence Portal**

Home | Dashboard | RCSA | KRIs | Internal Loss Data | External Loss Data

**Risk Heat Map**

Scorecards | Tables | Views | Diagrams | Graphs | Globals | Time Periods | Back | Forward

**Global: Risk Map**

EventRiskCategories, EventRiskSubCategories, Risk	Asset Management	Retail Brokerage	Corporate Finance	Trading and Sales	Agency Services	Payment and Settlement	Retail Banking	Private Banking	Comm Bankin
Business Disruption and System Failures	0	0	0	0	0	1,008,000	50,232,000	0	16,200
System Functions	0	0	0	0	0	1,008,000	50,232,000	0	16,200
RD1: Hardware failure	0	0	0	0	0	0	28,232,000	0	8,200
RD2: Software failure	0	0	0	0	0	1,008,000	22,000,000	0	8,000
Clients, Products and Business Practices	497,400,000	338,000,000	224,000,000	652,760,000	273,200,000	50,400,000	595,800,000	84,800,000	690,000
Damage to Physical Assets	25,200,000	1,200,000	0	0	0	0	20,400,000	0	40,000
Employment Practices and Workplace Safety	11,200,000	32,800,000	8,400,000	7,200,000	0	0	32,400,000	1,200,000	26,120
Execution, Delivery and Process Management	2,000,000	800,000	9,200,000	60,400,000	20,400,000	5,600,000	124,000,000	800,000	14,000
External Fraud	64,000,000	38,800,000	37,600,000	22,800,000	269,000,000	5,600,000	51,200,000	82,000,000	395,400
Internal Fraud	0	3,200,000	0	65,600,000	0	0	800,000	0	2,400

Portal Page

**Risk Mapping - Business Process Driven Approach**

Bookmark | Publish | E-mail

Scorecards | Tables | Views | Diagrams | Graphs | Globals | Time Periods | Back | Forward

**Big UK Bank: Sales Sub Process (Big\_UK\_Bank.Nov2004)**

**Key Characteristics of Sales Process**

Prospect → Quality → Underwrite Credits → Propose → Close

Key Characteristics:

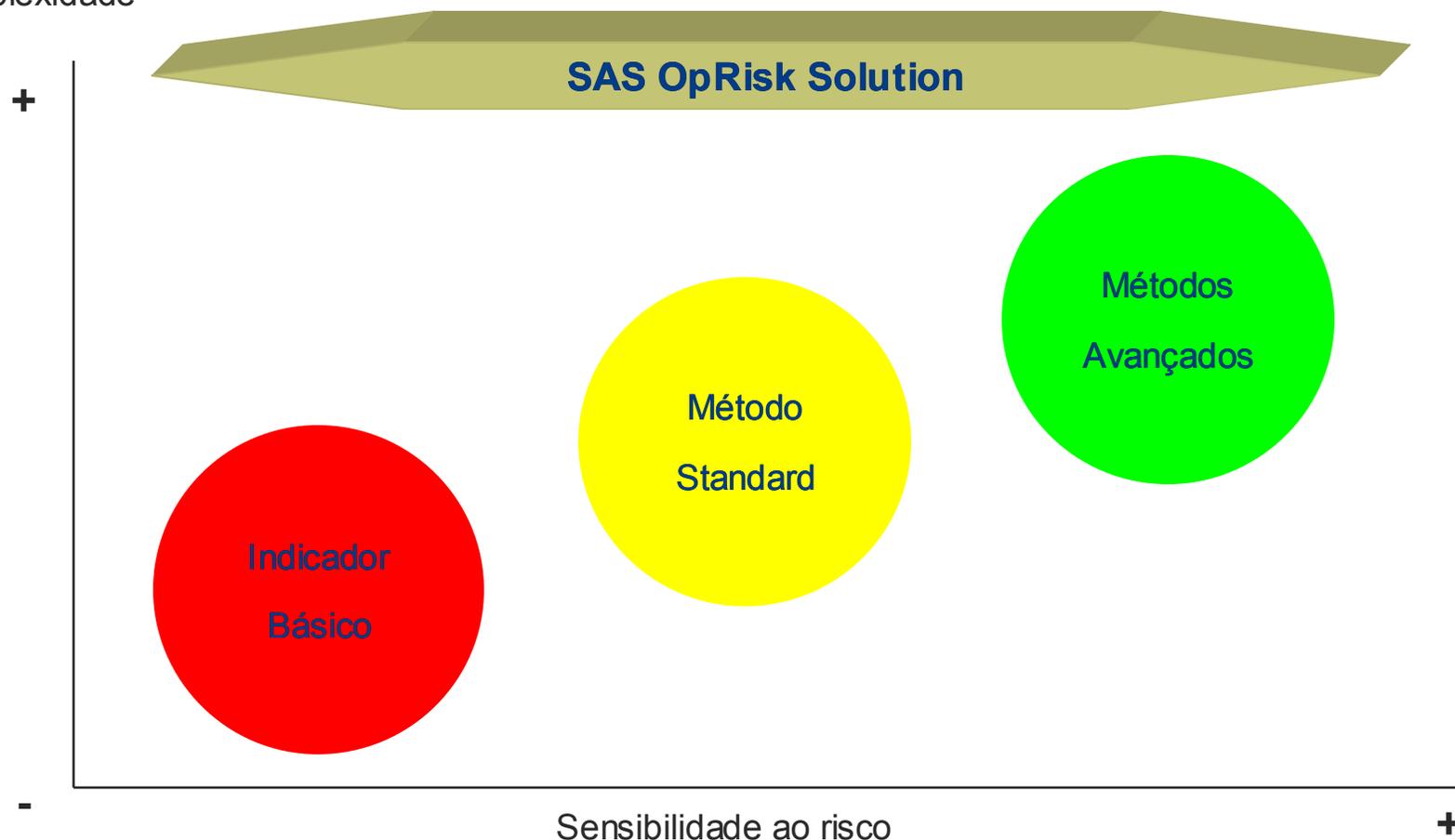
- ✓ Rigorous business planning and signoff by senior management
- ⚠ Entering unfamiliar markets
- ⚠ Misselling driven by incentive system
- ⚠ Poor understanding of product profitability
- ⚠ Errors/Misrepresentation in proposal phase
- ⚠ Trans records

Key Indicators:

- ⬇ KRI: Management Approval Rate (105.00%)
- ⬆ KRI: Closure Rate (81.82%)

## Basileia II (Solvência II)

Complexidade



Alocação de capital

- +

## Sarbanes-Oxley Act

### **Section 404: Formalization of systematic internal controls over financial reporting**

Documentation of management responsibilities for establishing and maintaining adequate internal controls

Establishment and documentation of framework used to conduct evaluation of internal controls

Annual (quarterly) management assessment of internal controls (and documented evidence of testing of processes)

Quarterly management assessment to evaluate any material changes in internal control environment

Accounting firm attestation report on

management's internal control assessment

Annual internal control report to be included in annual report

### **Section 302: CEO/CFO Certification Requirements**

CEO/CFO quarterly evaluation of disclosure controls and procedures

Review of quarterly and annual financial regulatory report submissions

Certify that reports are fairly presented

Formalization and documentation of responsibility for establishing and maintaining disclosure controls and procedures

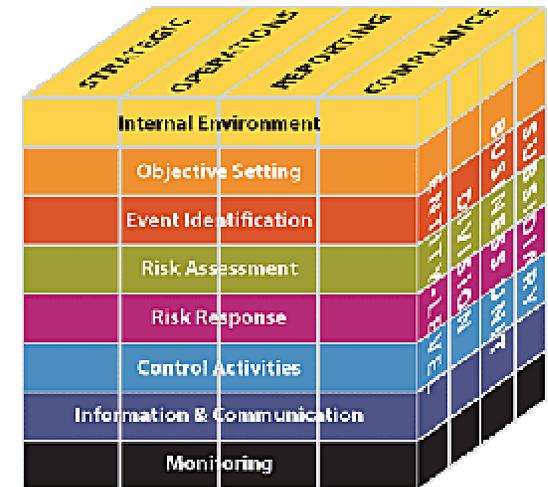
Inclusion of evaluation results in report, including any significant changes that affected internal controls

**SAS Solution for Compliance and Reporting**

## COSO: Key Implementation Factors

*“... a process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and **across the enterprise**, designed to identify potential events that may affect the entity, and manage risks to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives.”*

Source: *COSO Enterprise Risk Management – Integrated Framework*. 2004. COSO.



- |                                      |  |
|--------------------------------------|--|
| 1. Organizational design of business | 5. Identifying risk responses                |
| 2. Establishing an ERM organization  | 6. Communication of risk results             |
| 3. Performing risk assessments       | 7. Monitoring                                |
| 4. Determining overall risk appetite | 8. Oversight & periodic review by management |

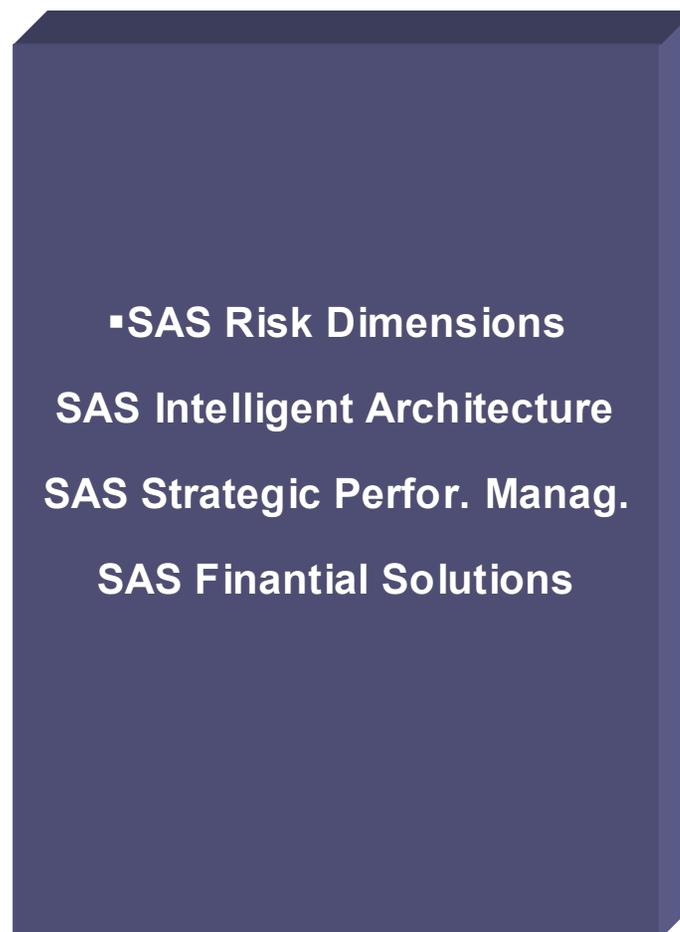


## O critério ERM da Standard & Poor's para Seguradoras

- Análise de 5 componentes:
  - Cultura de gestão de risco
  - Controlo do risco
  - Gestão de eventos extremos
  - Modelos de risco e de cálculo de capital
  - Gestão estratégica do risco



- Custos de capital mais elevados
- Maior dificuldade no acesso a capital
- Dificuldade em gerar novos negócios



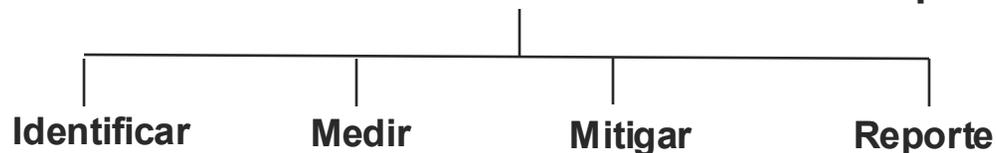
## Empresas sem pressões regulamentares

### Objectivo de um programa de Gestão de risco Operacional:

- Melhorias no processo de decisão
- Permite otimizar a relação entre resultados e riscos de todos os tipos
- *Business Continuity Plans*

### Um programa de 5 componentes:

- Visão
- Estratégia
- Estrutura de Governance
- Processos
- Tecnologia  Implementar bases de dados e sistemas de risco operacional



Integração com as ferramentas de gestão de risco de mercado e crédito

## SAS e Risco Operacional



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