

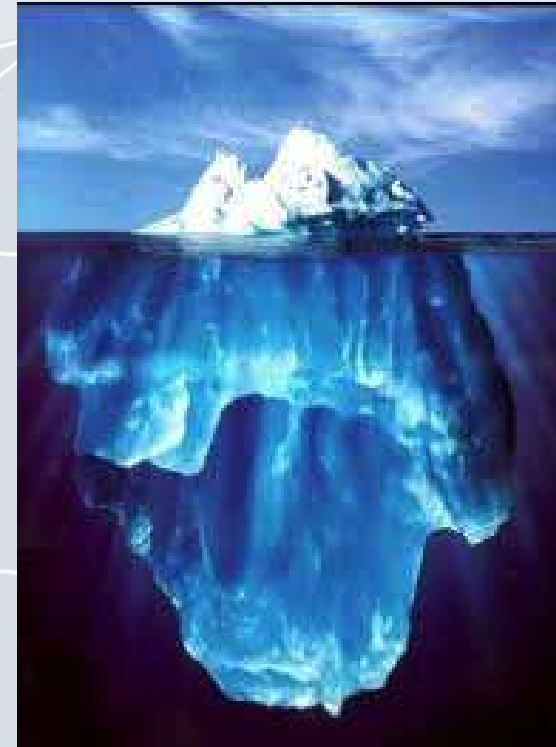


IAN STORKEY
INTERNATIONAL CONSULTANT



Operational Risk, a Potential Iceberg for a Government Debt and Treasury Operation

Presentation at
The World Bank
October 31, 2012



Colombia 2011



Brazil 2011



Chile 2010



Mexico 1985

Rethinking Risk Management

Key Words

- Comprehensive

=>

all risks; *financial, operational, information security*

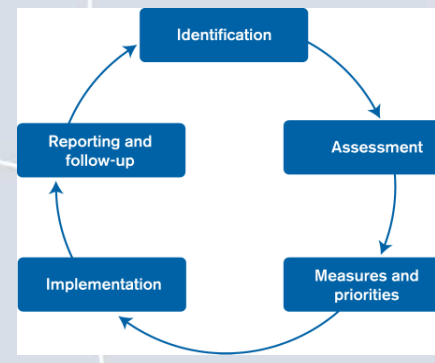
- Systematic

=>

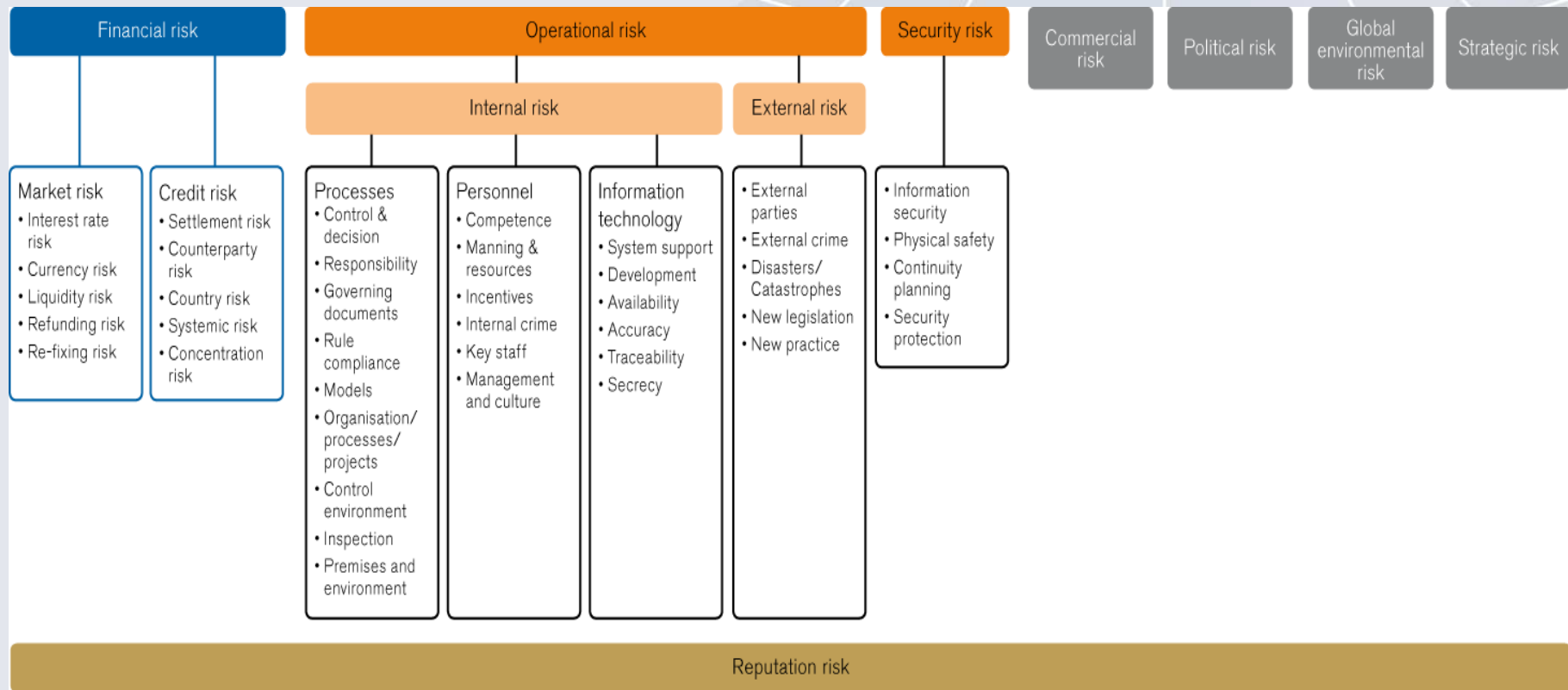
Roles, responsibilities, steps, parameters

- Process

=>



Example: Sweden



Source: SNDO (2009)

Operational Risk Management

The risk of loss resulting from inadequate or failed internal processes, people and systems or from external events

- definition explicitly includes legal risk, but excludes strategic and reputation risk
- has been applied to government debt management in publication by World Bank

ORM & BCP – Why Necessary?

ORM Govt Cases

- Anglo Leasing Affair in Kenya (2004)
- Orange County (1994)
- Hammersmith & Fulham Council (1989)

But often management deny or ignore that there are risks



BCP Facts

- Over one third of businesses that suffer a significant, though not necessarily catastrophic, business interruption are no longer in business within two years of the event

Costs can be high, reputation is at risk, but government's finances are critical, particularly in the case of a major incident such as a regional or national disaster

ORM & BCP – Why Not Addressed?

- **Mainly executive neglect:**

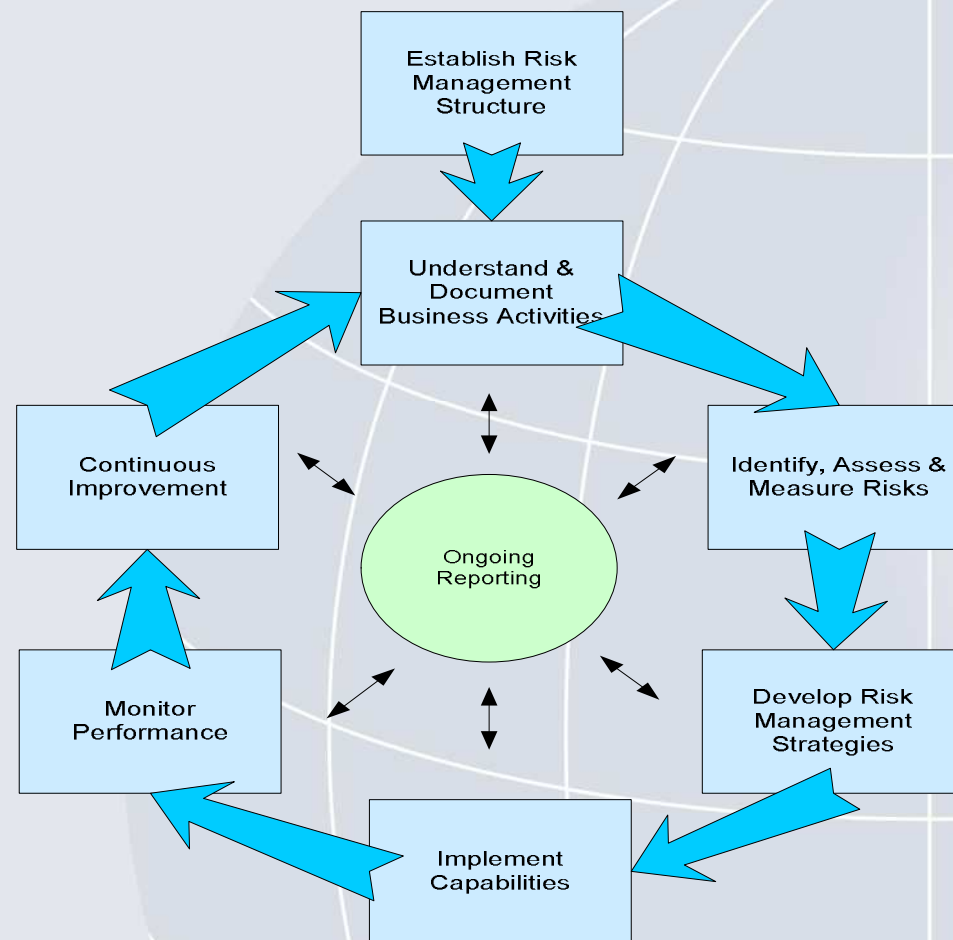
- “it won’t happen to us” is alive and well
- inadequate resource allocation
- low priority
- responsibility delegated
- project versus program
- relative lack of regulatory pressure

- **How well prepared is your DMO/Treasury?**

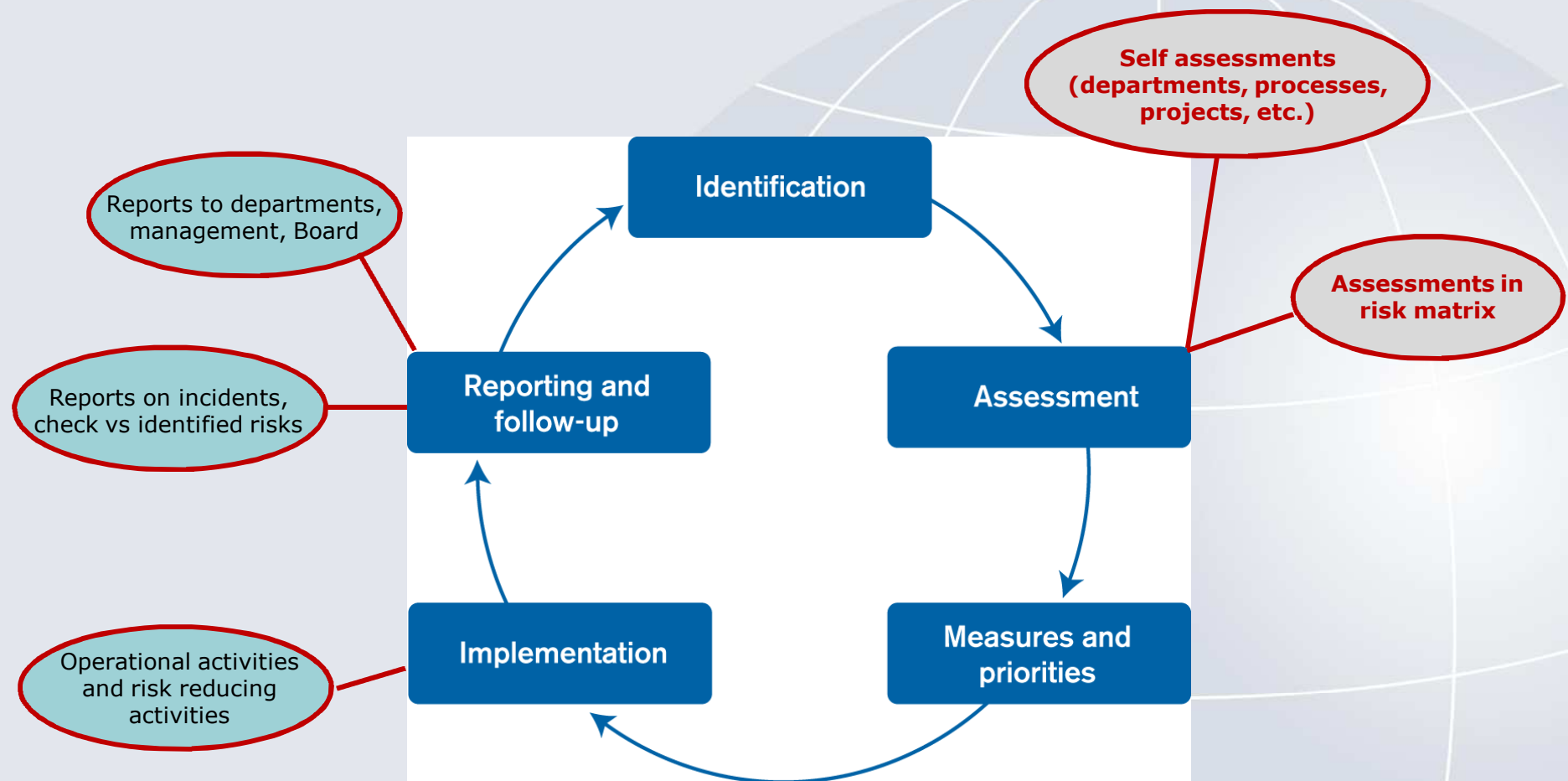
- do you have an ORM framework and BCP / DRP?
- is business continuity viewed within an ORM framework?
- has the plan been tested in the last 12 months?
- is your plan managed by IT or risk management?

Central Banks are normally better prepared than Ministry of Finance, as they normally have an ORM framework and a BCP/DRP including the recovery infrastructure such as an alternate site and alternate site, and regularly test

Six-Step ORM Framework

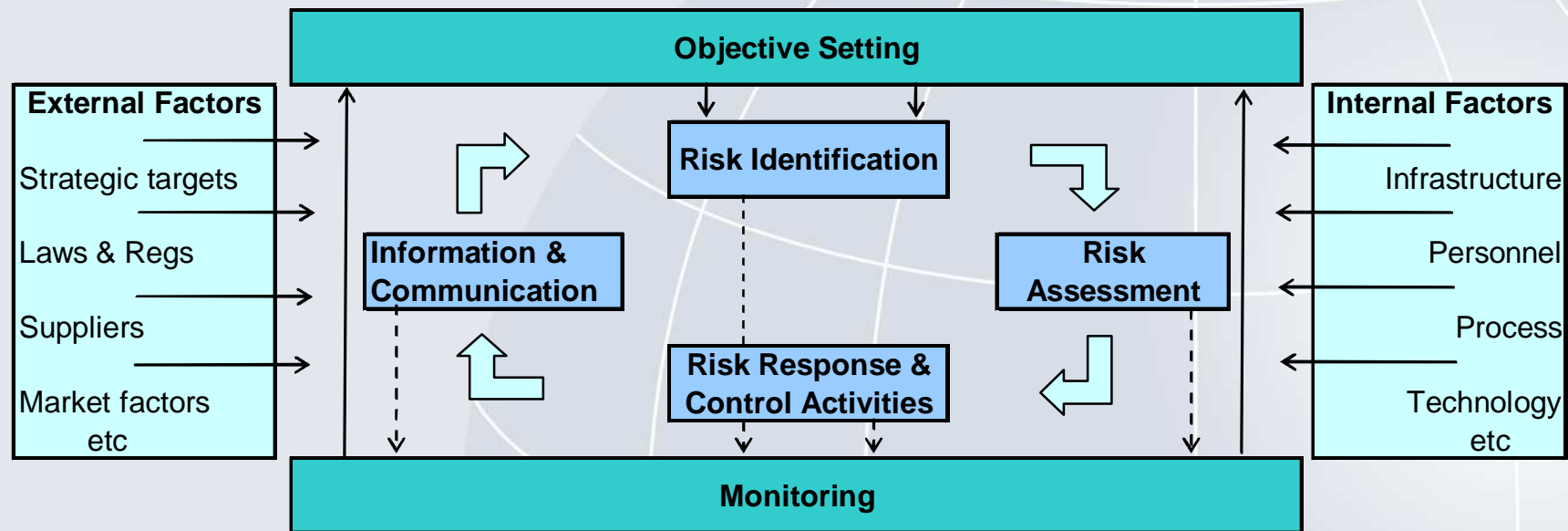


Example: Sweden



Source: SNDO (2009)

Example: Turkey



Source: Hakan Tokaç and Mike Williams (2012)

Operational Risks for Debt and Treasury Operations

<i>INFRASTRUCTURE AND TECHNOLOGY FAILURES</i>		
Power failure	Hardware failure	Sabotage
Data corruption including viruses	LAN/WAN/Intranet/ Internet failure	Internal flood (sprinklers, pipes)
Voice network failure	Theft of equipment	Theft of data/information
Poor maintenance	Accidental damage	
<i>INCIDENTS WHERE ACCESS TO PREMISES IS DENIED</i>		
Flooding or a fire concern	Health and safety violation	Hazardous chemicals accident
Gas or chemical leak	Industrial action or riot	Bomb or terrorist threat
Building fire or explosion	Internal/external flood	Sabotage or terrorism
<i>KEY SERVICE PROVIDERS OR RESOURCE FAILURES DEPENDENCIES</i>		
Failure of key service providers (telephone, internet, banking etc)	Third party providers (Central Bank and other outsourced operations)	Impact of incident on critical teams or groups (travel, food poisoning, group incident)

Operational Risks for Debt and Treasury Operations

<i>STAFF, MANAGEMENT AND RELATED HUMAN FAILURES</i>		
Human error (which may be due to poor training or inadequate supervision)	Poor training or inadequate supervision (which may lead to human error or execution of unauthorized transactions)	Failure to follow code of conduct or conflict of interest guidelines
Lack of policy guidance (which may lead to poor decisions or unauthorized activities)	Poor understanding of risk environment (which may lead to unnecessary or unknown risks)	Poorly specified delegations (which may lead to execution of unauthorized transactions)
Failure to follow or adhere to administrative practices (which may lead to processing errors)	Key person risk (which may lead to human error when key person is absent)	Fraudulent, corrupt or dishonest practices (which may lead to financial loss and political embarrassment)
<i>FAILURE TO MEET STATUTORY, LEGAL, HUMAN RESOURCES AND OTHER OBLIGATIONS</i>		
Legal/statutory obligations (e.g. compliance with loan agreements)	Management directives (e.g. internal policies and procedures)	Procedures manuals and delegated authorities
Reporting obligations (e.g. to higher authorities and international institutions)	Contractual obligations (e.g. debt service obligations)	Health and safety regulations (e.g. national workplace laws or regulations)
<i>MAJOR NATURAL AND REGIONAL DISASTERS</i>		
Earthquake	Severe flooding	Tsunami
Volcanic eruption	Severe fires	Civil disturbance or terrorism

Source: World Bank 2010

Impact Guidelines

Assessment of Impact	Reputational Impact	Financial Loss Impact	Impact on Outputs or Budget Variance
Very-High	<ul style="list-style-type: none"> Loss of stakeholder confidence Loss of market confidence Loss of trust, e.g. from primary dealers Extensive media coverage High-level ministerial enquiry [or resignation] 	<ul style="list-style-type: none"> Reported in government's financial statements Significant amount of time spent dealing with issue (i.e. greater than 30 person-days) 	<ul style="list-style-type: none"> Significant delay in achieving outputs Significant debt service budget variance (i.e. greater than 10%)
High	<ul style="list-style-type: none"> Strained stakeholder relationships Temporary loss of market confidence Moderate media coverage Ministerial enquiry 	<ul style="list-style-type: none"> Reported to minister Large amount of time spent dealing with issue (i.e. between 20 and 30 person-days) 	<ul style="list-style-type: none"> Large delay in achieving outputs Large debt service budget variance (i.e. between 5% and 10%)
Medium	<ul style="list-style-type: none"> Increased stakeholder attention Market confidence not affected Minor, if any, media attention Major attention within ministry/DMU 	<ul style="list-style-type: none"> Reported to the entity responsible for monitoring the DMU Moderate amount of time spent dealing with issue (i.e. between 10 and 20 person-days) 	<ul style="list-style-type: none"> Moderate delay in achieving outputs Moderate debt service budget variance (i.e. between 3% and 5%)
Low	<ul style="list-style-type: none"> Stakeholder and market relationships intact No media coverage Internal ministry/DMU enquiry 	<ul style="list-style-type: none"> Included in internal monthly reports Minimal amount of time spent dealing with issue (i.e. less than 10 person-days) 	<ul style="list-style-type: none"> Little or no delay in achieving outputs Little or no debt service budget variance (i.e. less than 3%)

Source: World Bank 2010

Example: Mexico

Assessment of Impact	Reputational Impact	Reporting & Resource Impact	Impact on TESOFE's Operations
Catastrophic	<p>Loss of Mexican Government confidence</p> <p>Loss of market confidence</p> <p>Loss of trust, e.g. States & Ministries</p> <p>Extensive media coverage</p> <p>High-level ministerial enquiry [or resignation]</p> <p>Financial and legal penalties</p>	<p>Reported to President or Congress</p> <p>Significant amount of time spent dealing with impact (i.e. greater than 20 person-days)</p>	<p>Failure to pay high priority payments on due date (personnel, debt service, tax refunds, States, taxes)</p> <p>To incur an erroneous payment such as crediting federal funds in the wrong account or deliver after the due date</p> <p>To incur payment default penalty (as no budgetary resource) such as, debt service, tax refunds, payroll and transfers to entities (with political impact).</p> <p>Incur an overdraft in bank account</p> <p>Unable to transfer between TESOFE's accounts due to the failure of BANXICO's payment systems and of commercial banks</p> <p>Unable to receive or access revenues</p> <p>Unable to transact in foreign currencies (receive, buy, sell or invest in USD)</p> <p>Unable to access TESOFEs bank accounts or its balances and operations</p>
Major	<p>Strained Mexican Government relationships</p> <p>Temporary loss of market confidence</p> <p>Moderate media coverage</p> <p>Ministerial enquiry</p> <p>Strained relationships with taxpayers and the discouragement of them to pay taxes</p>	<p>Reported to Minister</p> <p>Large amount of time spent dealing with impact (i.e. between 10 and 20 person-days)</p>	<p>Failure to pay Government contractors and/or subsidies, which would bring financial and political consequences because of payment delays</p> <p>Delay to pay the holder of a deposit or application for funds</p> <p>Unable to identify the concept of revenue</p> <p>Unable to issue reports for the operation and registration of revenues, and for official forms</p> <p>Unable to issue the certificate of received payment to the taxpayer</p> <p>Unable to open the vault that protects the official forms</p> <p>Inconsistent reports of bank accounts and their transactions and balances</p>

Example: Mexico

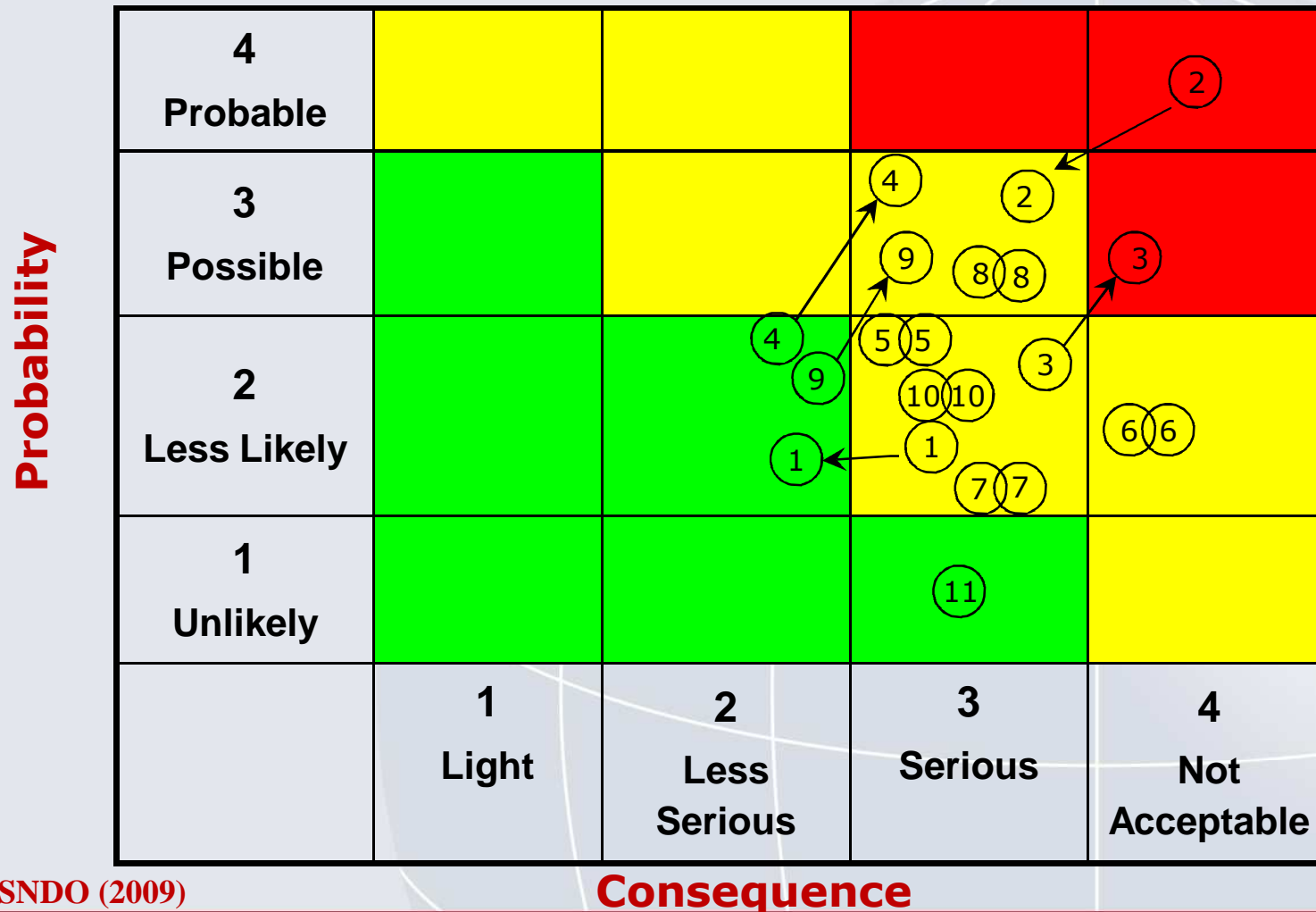
Assessment of Impact	Reputational Impact	Reporting & Resource Impact	Impact on TESOFE's Operations
Moderate	<p>Increased Mexican Government attention</p> <p>Market confidence not affected</p> <p>Minor, if any, media attention</p> <p>Major attention within SHCP</p> <p>Holder's deposit and taxpayers confidence is moderately affected</p>	<p>Reported to the entity responsible for monitoring the TESOFE (OIC)</p> <p>Moderate amount of time spent dealing with impact (i.e. between 5 and 10 person-days)</p>	<p>Failure to transfer funds to other Government agencies for minor expenses (revolving funds), and obligations that could be paid the following working day</p>
Minor	<p>Some Mexican Government attention</p> <p>No media coverage</p> <p>Internal SHCP enquiry</p> <p>Taxpayers' attention</p>	<p>Included in internal TESOFE reports</p> <p>Some amount of time spent dealing with impact (i.e. less than 5 person-days)</p>	<p>Same day delay in sending the payment layout to Banxico</p> <p>An official requirement to the Central Bank for extending banking hours</p> <p>Unable to place investments</p> <p>Unable to deliver timely reports to the accounting office</p> <p>Partial delivery of official forms and bills</p> <p>Unable to access the database of the authorized officers to instruct disbursements, as well as of the authorized signatures for withdrawals of deposits from third parties</p>
Insignificant	<p>Mexican Government and market relationships intact</p> <p>No media coverage</p>	<p>No reports needed</p> <p>Minimal amount of time spent dealing with impact (i.e. less than 5 person-hours)</p>	<p>Unable to operate from the main offices that causes a delay in payment executing timetable</p> <p>Errors in the electronic files of revenues sent to the accounting centers</p> <p>Same day delay in the payment to deposit holders</p> <p>Moderate delay in the delivery of the order of official forms</p>

Probability and Impact

	Low Impact	Medium Impact	High Impact	Very-High Impact
Very-High Probability (almost certain)	VHpLi	VHpMi	VHpHi	VHpVHi
High Probability (probable)	HpLi	HpMi	HpHi	HpVHi
Medium Probability (possible)	MpLi	MpMi	MpHi	MpVHi
Low Probability (remote)	LpLi	LpMi	LpHi	LpVHi

Source: World Bank 2010

Example: Sweden



Source: SNDO (2009)

Example: Turkey

		Impact level of risk				
		Insignificant	Minor	Moderate	Major	Catastrophic
Likelihood level of risk	Very Low	1	1	2	2	3
	Low	1	2	2	3	4
	Medium	2	2	3	4	4
	High	2	3	4	4	5
	Very High	2	4	4	5	5

Source: Hakan Tokaç and Mike Williams (2012)

Example: Mexico

		Impact Level of Risk				
		Insignificant	Minor	Moderate	Major	Catastrophic
Likelihood Level of Risk	Very High	3	4	4	5	5
	High	2	3	4	4	5
	Medium	2	2	3	4	4
	Low	1	2	2	3	4
	Very Low	1	1	2	2	3

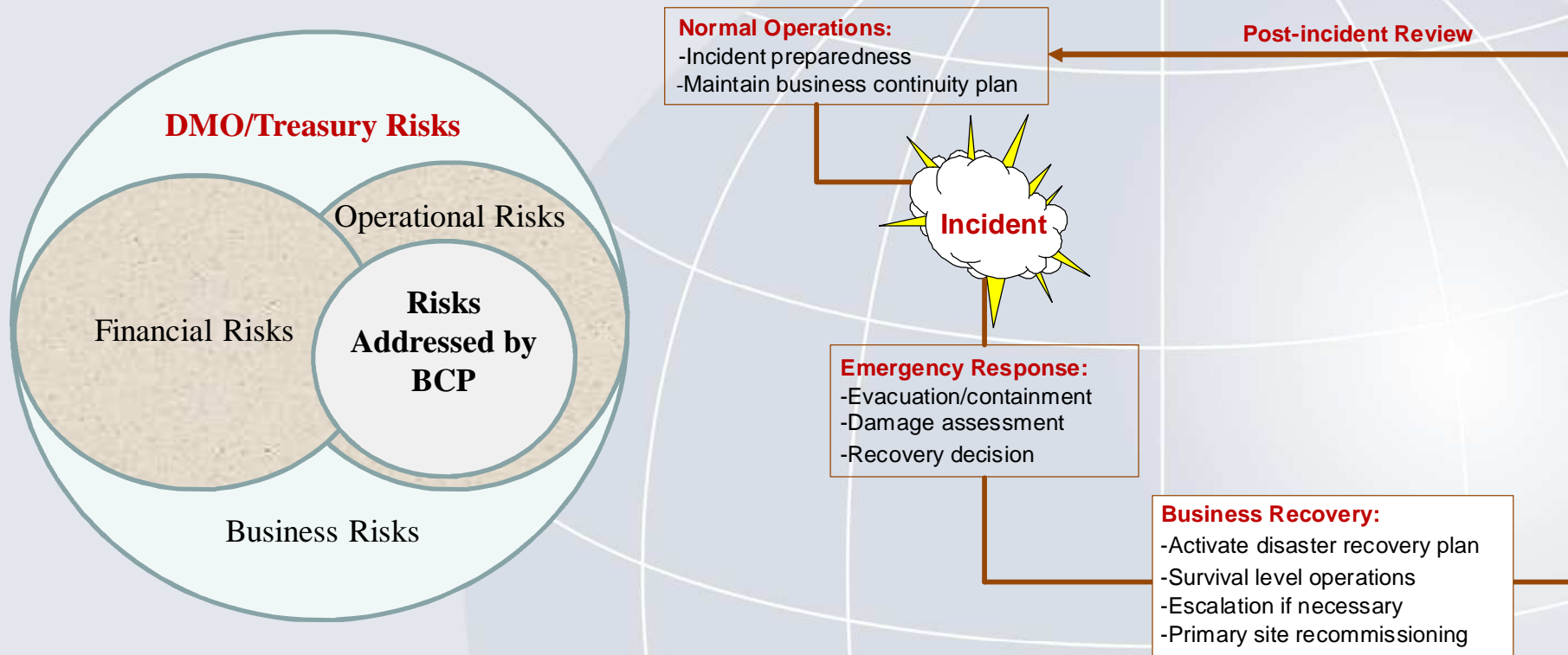
ORM and BCP Strategy

- **Prevention or avoidance**, where the probability of an event occurring is reduced or eliminated
- **Transference**, where risks are passed to third parties such as insurance or outsourcing
- **Containment**, where the potential impact of an event occurring is limited in the early stages using controls or other techniques
- **Acceptance and recovery**, where an event or disruption might well occur but debt management operations can be resumed successfully using the disaster recovery plan

ORM and BCP Implementation

- Appoint an **ORM/BCP champion** to oversee implementation of measures approved by senior management:
 - training program
 - raising awareness
 - introducing ORM/BCP into service level agreements
 - developing control tools and mitigation strategies
 - developing reporting requirements
 - maintaining ORM/BCP and annual testing

Business Continuity Planning



Six-step BCP/DRP Framework

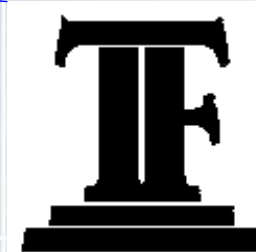
1. Document **business activities** and **critical processes and systems**
2. Undertake **business impact analysis** to assess probability and impact
3. Develop **BCP/DRP** (include 3rd parties)
4. **Implement** or **update** BCP/DRP
5. **Training** to imbed into the day-to-day operations of the treasury
6. Regular (annual) **testing** and **updating**

Example: Mexico

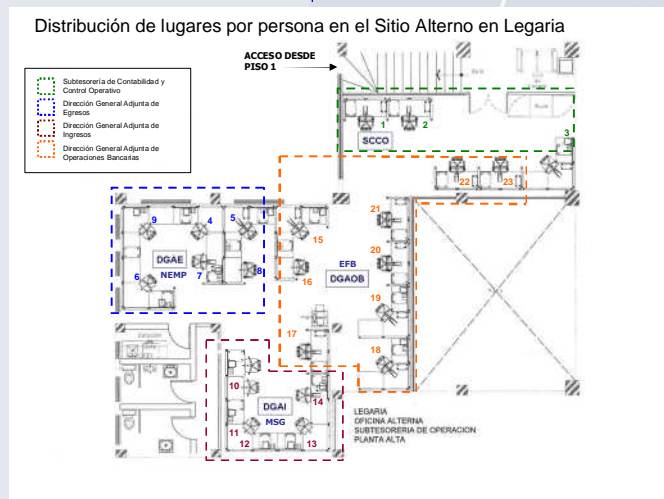
Triara IT Data Center in Querétaro



Treasury Building (TESOFE)



Alternate Site in Mexico City



References

- Bank for International Settlements (2003), **“Sound Practices for the Management and Supervision of Operational Risk”**, Basel Committee on Banking Supervision [<http://www.bis.org/bcbs/index.htm>]
- Committee of Sponsoring Organizations (COSO) of the Treadway Commission (2008), **“Internal Control – Integrated Framework: Guidance on Monitoring Internal Control Systems”** [<http://www.coso.org>]
- International Monetary Fund (2011), **“Operational Risk Management and Business Continuity Planning for Modern State Treasuries”** Technical Note and Manual (TNM1105) by Ian Storkey [<http://www.imf.org/external/pubs/ft/tnm/2011/tnm1105.pdf>]
- TransConstellation (2007), **“Best Practices in Qualitative Operational Risk Management: The ORM Reference Guide”** [<http://www.transconstellation.com>]
- TransConstellation (2007), **“Roadmap to Operational Risk Management Success: The ORM Maturity Benchmark”** [<http://www.transconstellation.com>]
- World Bank (2010), **“Guidance for Operational Risk Management in Government Debt Management”** by Tomas Magnusson, Abha Prasad and Ian Storkey [<http://go.worldbank.org/GLNMQ6PVA0>]

Useful Reading

- Australian National Audit Office (2009), **“Business Continuity Management: Building Resilience in Public Sector Entities, Best Practice Guide–June 2009”**
[http://www.anao.gov.au/~media/Uploads/documents/business_continuity_management_.pdf]
- British Standards Institution (2006), **“Business Continuity Management: Code of Practice”** [<http://www.bsigroup.com/en/Assessment-and-certification-services/management-systems/Standards-and-Schemes/BS-25999/>]
- Hakan Tokaç and Mike Williams (2012 forthcoming), **“Government Debt Management and Operational Risk: A Risk Management Framework, and how it was applied in Turkey”**
- International Organization for Standardization (2011), **“ISO-27031: Information Technology–Security Techniques–Guidelines for Information and Communication Technology Readiness for Business Continuity”**
[http://www.iso.org/iso/catalogue_detail?csnumber=44374]