Scenario analysis How to deal with uncertainty?

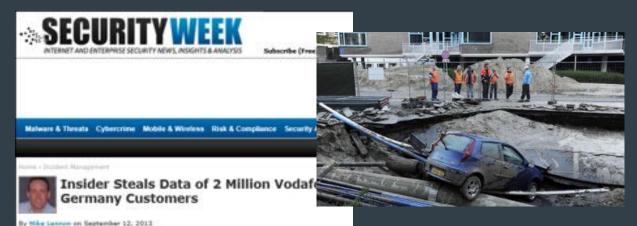
Hans Bikker

IOR - 10 September 2015

BLAND AND AND AND ADDIED BEAUSTICES, MAIL, AND ADDIED ADDIED

DeNederlandscheBank

Did you see it coming?



VU Medical Center



Very heavy snow fall



A Vodafone incident

Regulatory risk

DeNederlandscheBank

EUROSYSTEEM

Banken blijven struikelen over renteswaps

29 mei 2015



Banken onderschatten de urgentie in de rentederivatenproblematiek. Dat zegt de Nederlandse financieel expert en vaste medewerker aan cm: dr. Victor Macrae in zijn boek *Mastering interest rate risk strategy*: Financial Times Publishing lanceert volgende week zijn boek over mis-selling van derivaten en derivatenblunders. Volgens Macrae moeten banken proactiever zijn om het rentederivatenprobleem op te lossen anders gaat het hen veel geld en reputatieschade kosten.

Reputation risk because of a product

What about the future? Blurry or clear?



DeNederlandscheBank

EUROSYSTEEM

Uncertainty – you expect something but..



DeNederlandscheBank

EUROSYSTEEM

Insight is required...

CRD IV

Article 85

Operational risk

 Competent authorities shall ensure that institutions implement policies and processes to evaluate and manage the exposure to operational risk, including model risk, and to cover low-frequency high-severity events. Institutions shall articulation what constitutes operational risk for the purposes of tho policies and procedures.

Guidelines on Forward Looking assessment of own risks - ORSA

Guideline 12 - Assessment of the overall solvency needs

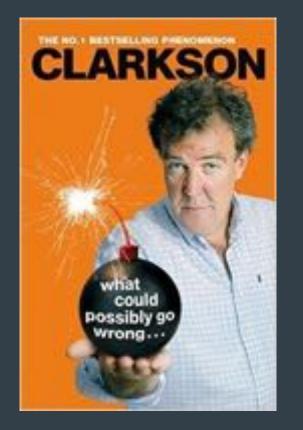
- 1.39. In accordance with Article 45 of Solvency II Directive, national competent authorities should ensure that the undertaking assesses its overall solvency needs and then expresses the overall solvency needs in quantitative terms and complements the quantification by a qualitative description of the material risks.
- 1.40. Where appropriate, national competent authorities should ensure that the undertaking subjects the identified material risks to a sufficiently wide range of stress test or scenario analyses in order to provide an adequate basis for the assessment of the overall solvency needs.

Guideline 13 - Forward-looking perspective of the overall solvency needs

1.41. In accordance with Article 45 of Solvency II Directive, national competent authorities should ensure that the undertaking's assessment of the overall solvency needs is forward-looking, including a medium term or long term perspective as appropriate.

DeNederlandscheBank

How to get insight? Scenario analysis

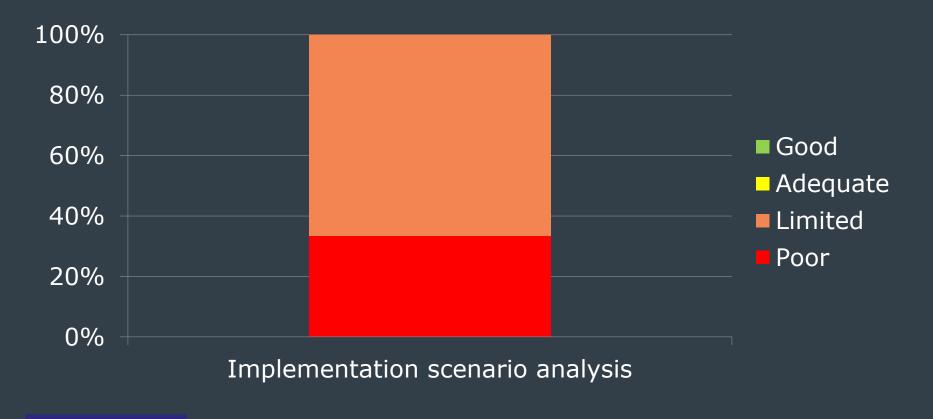


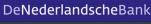


DeNederlandscheBank

EUROSYSTEEM

How well are non-AMA banks doing in NL? DNB investigation 2014 shows poor results





EUROSYSTEEM

Some charateristics of scenario analysis

"Scenario analysis is a process of obtaining expert opinion of business line and risk managers to identify potential operational risk events and assess their potential outcome".

Source: BCBS Principles for the Sound Management of Operational Risk, 2011

- Subjective process
- Involvement of first and second line
- Focus on plausible events
- Focus on extreme events

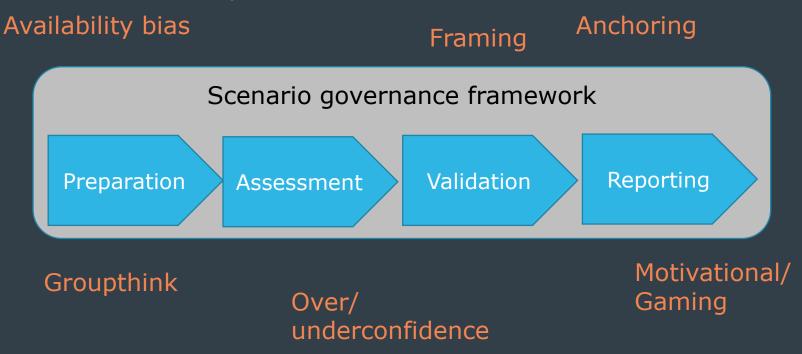
8 - IOR / Scenario analysis for ORM

EUROSYSTEEM

DeNederlandscheBank

Basic elements robust scenario analysis process Without, biases could harm a reliable outcome

Representativeness

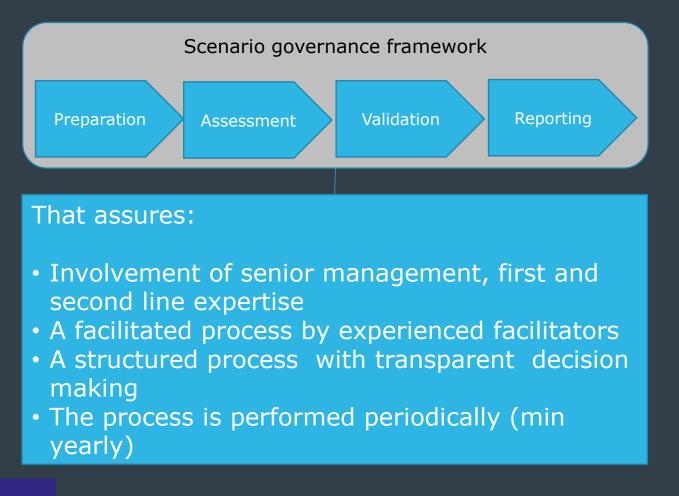


Source: KPMG & ORX, Preparing for the Unexpected. Leading practices for Operational Risk Scenarios, 2011

DeNederlandscheBank

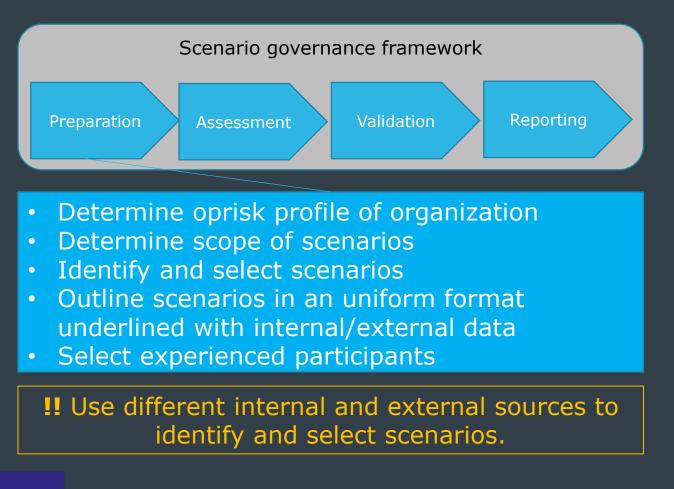
EUROSYSTEEM

Basic elements robust scenario analysis process Scenario governance framework



DeNederlandscheBank

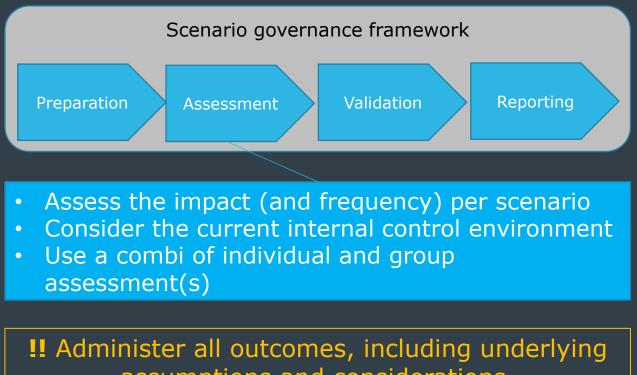
Basic elements robust scenario analysis process Preparation



DeNederlandscheBank

EUROSYSTEEM

Basic elements robust scenario analysis process Assessment

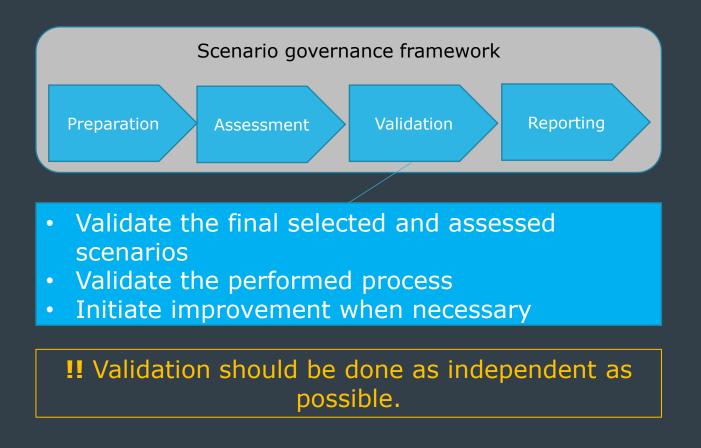


assumptions and considerations.



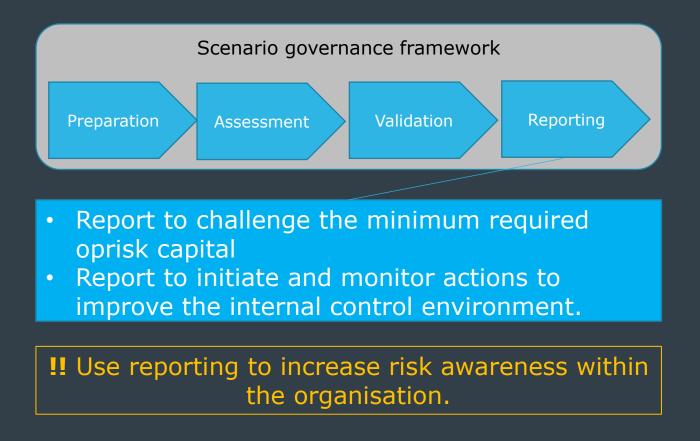
12 - IOR / Scenario analysis for ORM

Basic elements robust scenario analysis process Validation



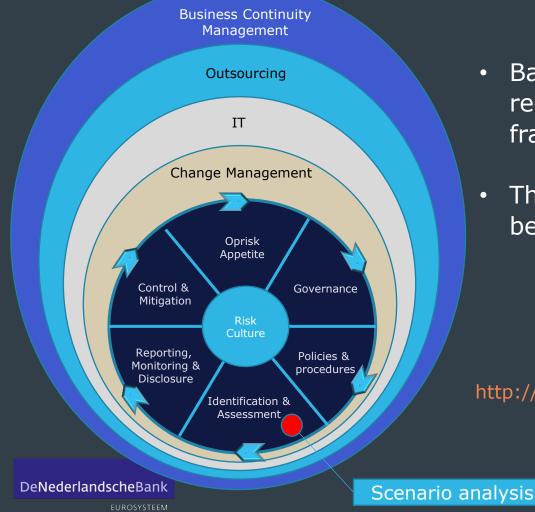


Basic elements robust scenario analysis process Reporting





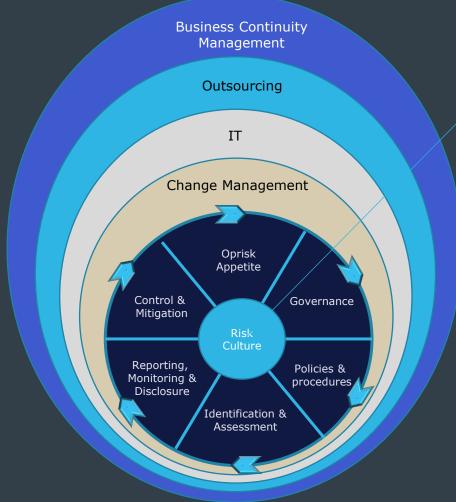
Scenario analysis stands not alone It is part of the ORM framework



- Based on the PSMOR, DNB has recently published a reference framework on Openboek.
- This reference framework can be used as a self-assessment.

http://obtinternlive.dnb.nl/3/50-229146.jsp

ORM reference framework / self-assessment For a bank with a standardized approach



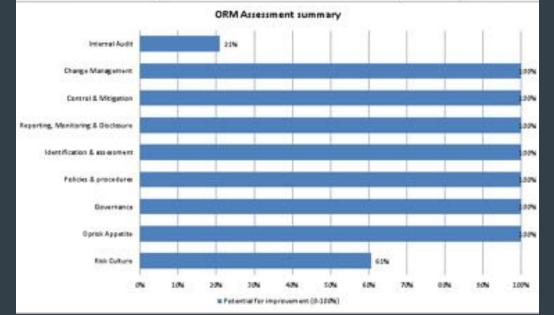
	Not Labor.	cases of bothstas	balag					Explanation of some	-
•	Ream		No.	Partle	Alment	Fully			
85	Tone at the top, shit values and this emanates	The bland of directors previous mendians) and sensini management ensure that a memory value winter their spaties to strong stat management, stat assessments and thicks business predices and with an assessment with the their spati.	- sanda	institu	-	rempty	-		NO.
80		Where the half optical of beneficially versions, changes or deviates from the sine emissioned, constraint measures are taken + p, by rolling not en experient invicts non-extension takening or by formations the net universe.							NOTES I
10	Code of cooders and staff integrity	The institution has an actual code of conduct or an ethics policy which sets of an expectation of the integrity and attrical restors of the highest attricted and identifies acceptable boomers practices and policities controls.							10000
13		The interface percentianty exercises of playfithery is desire notions of and simply with the strong invites and exceptible buckness produces, e.g. to supporte practice produced in the support well engineering measurements sources, to means of a sufficient planetwork, threading measurement of the sufficient strain is according on the strain strain sector description of the sufficient sector backwork, the standard measurement of the sufficient strain sector backwork, the standard measurement and the sufficient sector backwork with these measurements on practices, and							60000
82		The relevant second trace of partnerse, out as 1990; Compiliance and 2990 cooperate adequately with regard to democracy attention for and addition (We experivation's ethics) and excepted comment print risk.							RCOPUL
80	Operational dok training	en appropriate land of operational run transveg is andrable and periodically attended at 40 lands throughout the organization (e.g. from office, business and operations, sensor management, band, etc.)							ACCHES,
80		The training provided reflects the sensority, rais and responsibilities of the individuals for whom it is intended and ensures awardness of all spensional insis and effectiveness of assessments.							ACCOUNTS
83	Provident visit	Activities are conducted by staff with the heranism competence, experies, experience, technical capabilities and access to resources. The inditation ansame that staff manipulation is competence.							ACCORNER
10		The take is appropriately started functions are provided to deal with small-one of understarting and key man exposure.							BECOMM.
READ	Kish taking lacentizes	The institution's contracting overflows are appropriately aligned of the existing on a kappetite, long-term character, devices, from the goals and institut suffy and synchronic.							ALCORN.C
803	v. 1933	The internal performance measurement wathances appropriately takes one account operational acid.							NCOPULA

- The core including Change Management has already been worked in a selfassessment. Other components will be ready by begin 2016.
- Each component is worked out in one or more topics with related controls which can be scored ('not comply, partly comply', 'almost comply' or 'fully comply').

DeNederlandscheBank

ORM reference framework / self-assessment Useful for communication, prioritization and insight

Assessment summary	cause of institution>								
High level overview									
Tepic	Potential for improvement (0-300%)	Priority	% (connectity) filled in						
Risk Culture	61%	8	100%						
Oprisk Appetite	100%	1	0%						
Governance	100%	1	0%						
Policies & procedures	100%	1	0%						
Identification & assessment	100%	1	0%						
Reporting, Monitoring & Disclosure	100%	1	0%						
Control & Mitigation	100%	1	0%						
Change Management	100%	1	0%						
Internal Audit	21%	9	100%						



The results are presented in tables and graphs showing:

- Potential for improvement
- Priority
- % (correctly) filled in

Besides the overall level, this presentation is also available per component.

DeNederlandscheBank

End of presentation. Thank you!

DeNederlandscheBank

EUROSYSTEEM