

A close-up, low-angle shot of a sailboat's mast and a large white sail against a clear blue sky. The mast is made of polished metal and is surrounded by white ropes and rigging. The sail is partially unfurled, showing its texture and the way it catches the light. The background is a deep blue, suggesting the ocean.

STRUCTURED SCENARIO ANALYSIS FOR OP RISK

HIGH QUALITY RISK EVALUATIONS

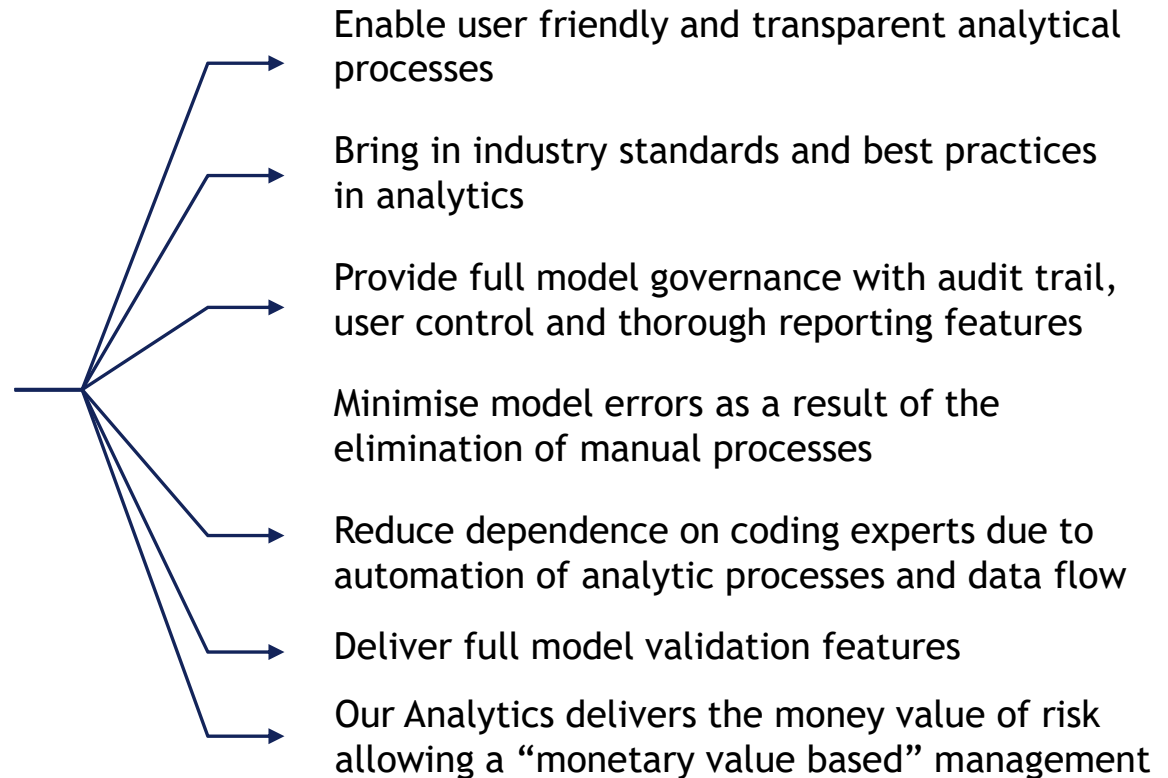
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APRIL 2020

THE ANALYTICS BOUTIQUE
Analytics made friendly
A TRUE NORTH PARTNERS company

The Analytics Boutique (TAB) is a risk analytics software company that builds user friendly analytics solutions to uplift the risk capability of your institution

We believe that analytics teams, rather than designing and developing code, should be focused on value added tasks, being assisted by user friendly tools with full model governance, integrity of data flows between analytical processes and mechanised report generation



We help organisations move from data to action

We are well recognised in the GRC industry for our award winning offerings in the op risk management, measurement and stress testing space

2016/17 industry award recognition with 5 awards...and 5 awards in 2018/19



By Risk.Net (Risk Magazine)



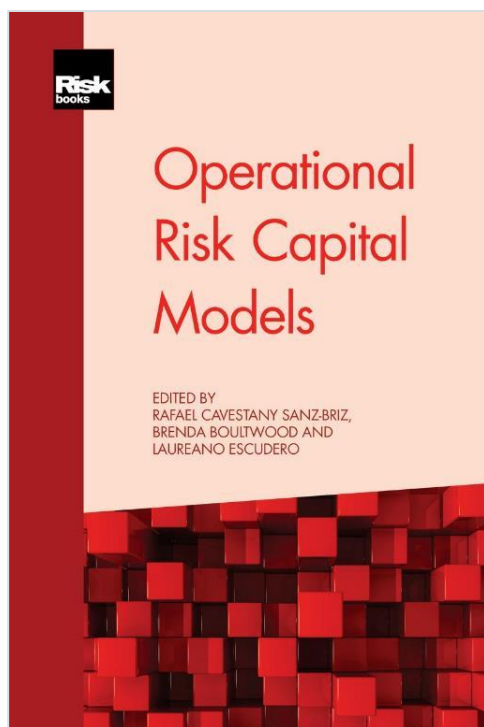
By InsuranceERM

We are thought leaders in the risk industry and have made significant contributions to the advancement of the GRC Analytics industry

"I found the quantitative methods presented in "Operational Risk Capital Models" to be not only rigorous, but also understandable and actually useable and useful, which can be said of shockingly few books treating operational risk. Amidst a wasteland of operational risk management pie charts and unactionable and subjective heat maps, books like this are an oasis of practical, applied solutions for capital estimation and stress testing. If your objective is to directly and measurably mitigate and manage operational risk using scientifically defensible, objective methodology, as opposed to red-amber-green traffic 'analyses,' the methods herein are the kind you need."

J.D. Opdyke, GE Capital

RiskBooks, Incisive Media



Book description	Book details	Editor biography	Table of contents	Testimonials
Testimonials <i>"The book covers in detail all the building blocks of operational risk modelling with a very pragmatic, step-by-step, view from industry practitioners so the reader can see how the operational risk capital is actually calculated and stress tested. The authors move from the technicalities of credit calculation to the integration of this capital into the strategic and tactical decisions of the financial institutions. In my view, this book is a strong contribution to operational risk management in this new era."</i> Marcelo Cruz, Professor, New York University Stern School of Business and Editor-in-Chief, Journal of Operational Risk				
Customer Reviews Average customer reviews for Operational Risk Capital Models ★★★★★ 7 Reviews Add Your Review ★★★★★ Meeting the theoretical with the practical The book provides an excellent view into how to practically model operational risk, showing alternative methods that have all been tried and tested. While many theoretical texts are out there, few are able to distill down into something pragmatic enough to implement in practice being able to trade off statistical reliability with issues of lack of data and expert judgement. This book covers these issues and a full range of possible ways depending on what is available to the modeler. Review by Andrew Morgan - Quantitative Risk Analyst, Old Mutual plc, 28/10/2015 ★★★★★ A very practical and implementable approach to operational risk modelling The book includes interesting and innovative topics such as structured scenario analysis, techniques for determining optimal level of granularity for modelling, methods for qualitative derivation of correlation, and the modelling of correlation between frequency and severity. The outputs of proposed quantitative methods can be integrated into daily risk management practices and performance measures, making the book very relevant for modern day financial institutions. Review by Flippie Snyman, Enterprise Risk Management, FirstRand, 26/10/2015 ★★★★★ A practical book to start building Op Capital models An easy to read book that covers all relevant topics on how to build operational risk capital models. Its easy to pick up this book and start designing and planning your model implementation. The authors are practitioners in the field and hence the book gets to implementation issues quickly with practical ways to solve common challenges we face in the course of our work. I recommend this book to anyone wanting to start implementing models.				

Marcelo Cruz, Morgan Stanley

The Actuary Magazine, Society of Actuaries

FEATURE
STRUCTURED SCENARIO ANALYSIS

CALCULATED



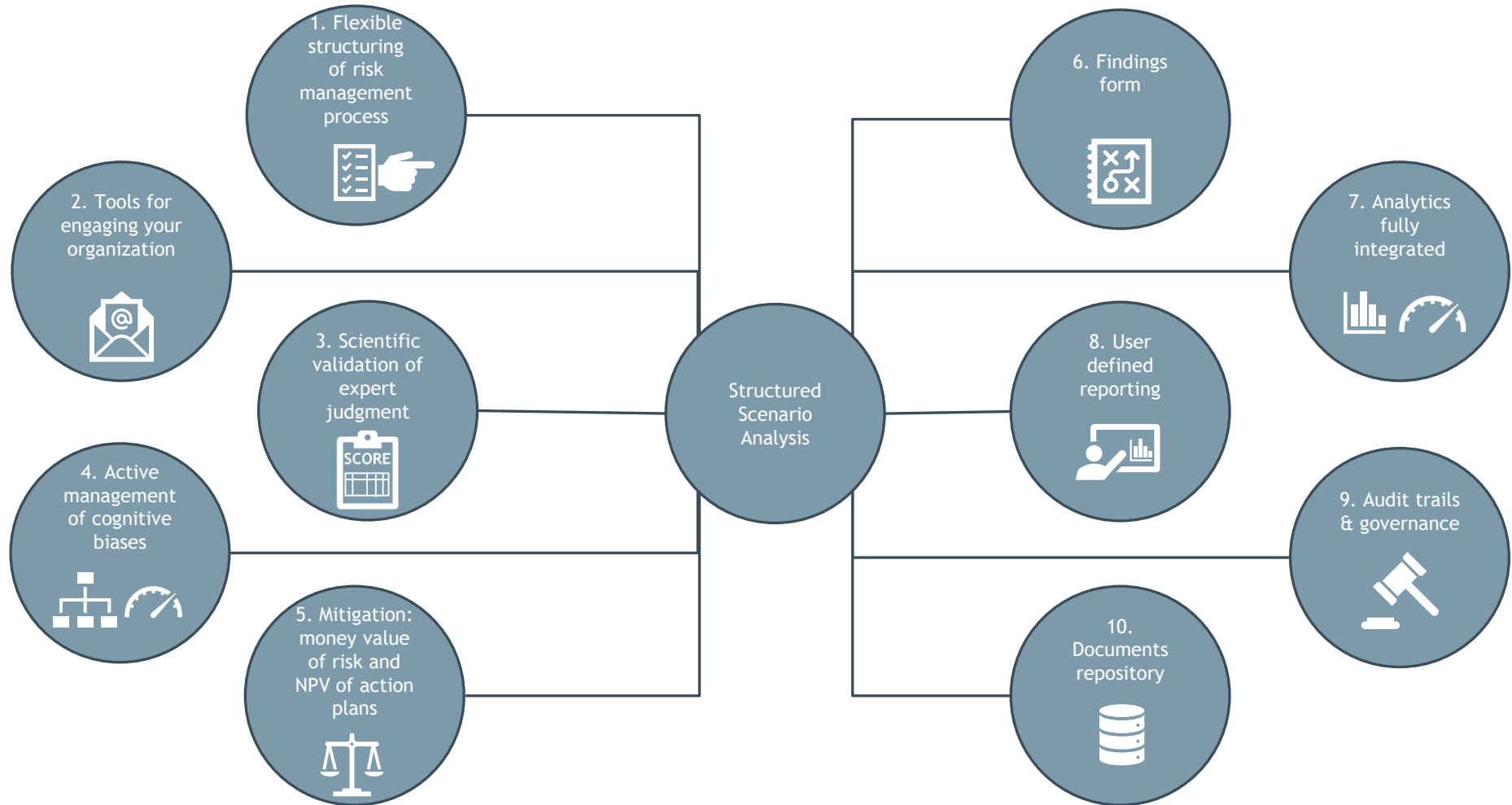
USING STRUCTURED SCENARIO ANALYSIS FOR AN EFFECTIVE OPERATIONAL RISK MANAGEMENT AND STABLE CAPITAL REQUIREMENTS DETERMINATION

BY RAFAEL CAVESTANY, ETIENNE HOFSTETTER AND DANIEL RODRIGUEZ

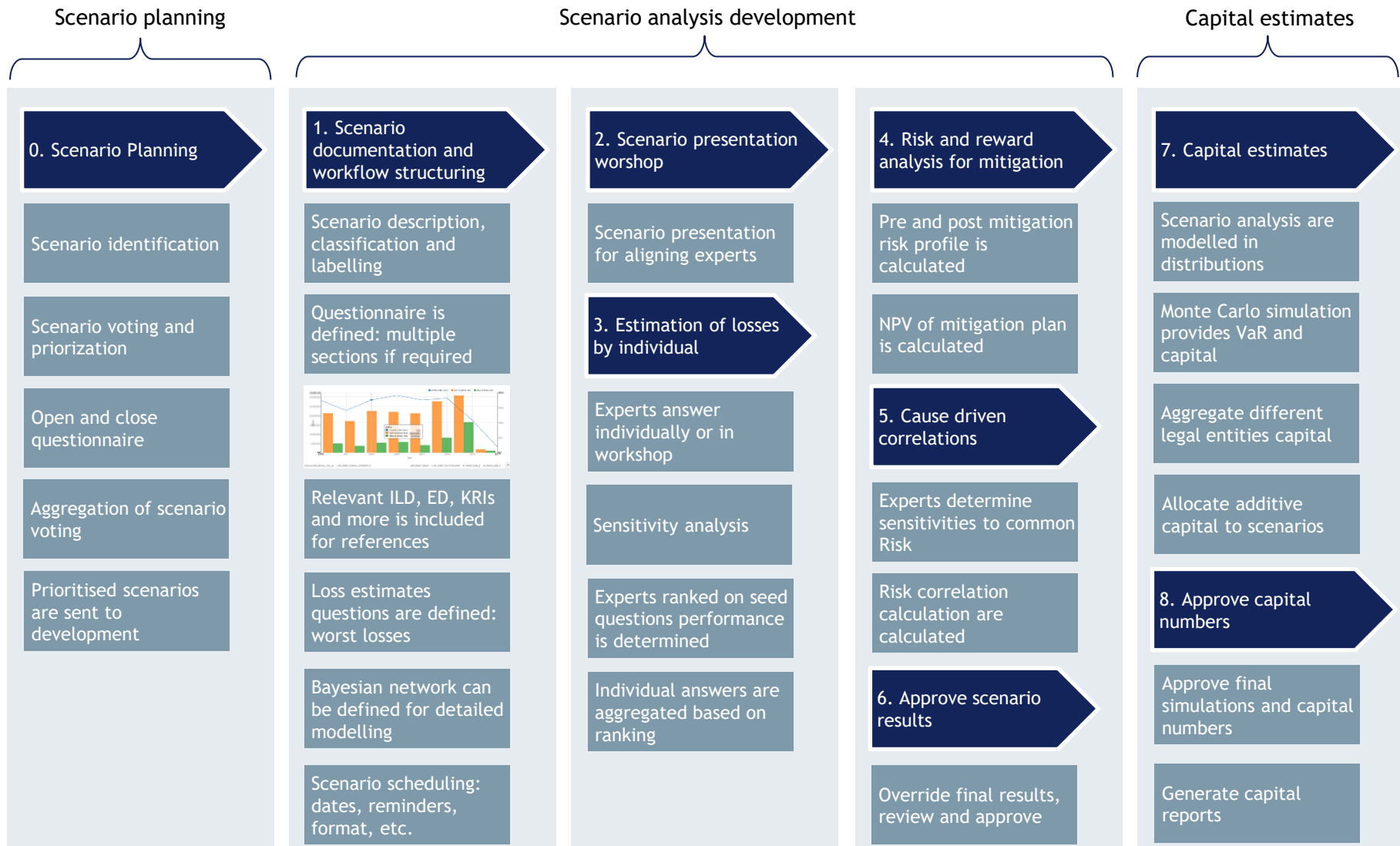
Award winning Structured Scenario Analysis represents a breakthrough addressing most burning issues in judgment based risk assessments

Cognitive biases mitigation	<ul style="list-style-type: none"> Structured Scenario Analysis is designed to mitigation multiple biases: need for closure, herding or group thinking, confirmation biases, anchoring biases, authority biases and other
risk measurement & mitigation jointly	<ul style="list-style-type: none"> In Structured Scenario Analysis, risk mitigation is evaluated together with risk evaluation, using a scientific method based on calculating the money value of risk
Money value of risk	<ul style="list-style-type: none"> By on-the-fly Monte Carlo simulation, it calculates the cost of assuming risks and compares it with the savings of hedging/controlling such risk providing the NPV of mitigation actions
Scientific validation of expert judgment	<ul style="list-style-type: none"> Structured Scenario Analysis implements performance based expert judgment which allows to validate responding experts based on limited available information
Efficiency features and for engaging your organization	<ul style="list-style-type: none"> It enables a workflow, email sending system, expert responding progress page, reminders, answers automated aggregation, extensive reporting, and more
Correlation approach	<ul style="list-style-type: none"> Structured Scenario Analysis provides a solid cross-scenario correlation approach based on expert judgment Correlations are very transparent, intuitive and easy to justify
Robust and stable capital calculation	<ul style="list-style-type: none"> Structured Scenario Analysis integrates different sources of data (ILD, ED and BEICFs) to compute a more stable capital charge, adding information of the distribution tails, reducing the volatility of capital estimates
Analytics available to 1st line of defence	<ul style="list-style-type: none"> Structured Scenario Analysis provides, to the first line of defence, the cost of risk, saving from mitigation and NPV of action plans required investing, encapsulating all modelling complexities thanks to AI algorithms
Strong governance	<ul style="list-style-type: none"> User control, audit trail, roles and activities differentiated by user and other
Fully flexible	<ul style="list-style-type: none"> Flexible forms, user defined number of loss collection processes, indicators, configurable workflow, etc.

Structured Scenario Analysis a comprehensive range of functionality that caters for holistic and efficient scenario analysis process



Structured Scenario Analysis phases the risk evaluation process for exhaustively collecting and processing the required data and mitigating biases



Structured Scenario Analysis permits to define any number of user defined scenarios as well as leveraging from our scenario library

Conduct risk scenario library

Scenario line

Filters:

Scenario line : Division :

Creation date : Segment :

Status : BU :

Modelling period : BL :

Scenarios list

Show entries

	Scenario name	Status	Creation date	Completion date	Actions
<input type="checkbox"/>	Mortgage arrears and forebearance	PREPARATION	2019-03-15		Edit Form Send invitations Full start Progress X
<input type="checkbox"/>	Product design	PREPARATION	2019-03-15		Edit Form Send invitations Full start Progress X
<input type="checkbox"/>	Complaints management	PREPARATION	2019-03-15		Edit Form Send invitations Full start Progress X
<input type="checkbox"/>	Sales practices	PREPARATION	2019-03-15		Edit Form Send invitations Full start Progress X
<input type="checkbox"/>	Remuneration	PREPARATION	2019-03-15		Edit Form Send invitations Full start Progress X
<input type="checkbox"/>	Corporate governance	PREPARATION	2019-03-15		Edit Form Send invitations Full start Progress X
<input type="checkbox"/>	Benchmarking	PREPARATION	2019-03-15		Edit Form Send invitations Full start Progress X
<input type="checkbox"/>	Incentive schemes	PREPARATION	2019-03-15		Edit Form Send invitations Full start Progress X
<input type="checkbox"/>	Fees and charges	PREPARATION	2019-03-15		Edit Form Send invitations Full start Progress X
<input type="checkbox"/>	Financial promotions	PREPARATION	2019-03-15		Edit Form Send invitations Full start Progress X

Showing 1 to 10 of 11 entries

IT risk scenario library

Risk scenario name

- 1 - Spoofing
- 2 - Modification
- 3 - Wormhole
- 4 - Fabrication
- 5 - Denial of services
- 6 - Sinkhole
- 7 - Sybil
- 8 - Traffic attack
- 9 - Eavesdropping
- 10 - Monitoring

Previous 1 2 Next

Structured Scenario Analysis provides flexible risk evaluations in workshops or individual responses and a customized structuring of the evaluation workflow

The organization of each risk evaluation can be fully customised based on the risk type needs regarding controls, mitigation analysis. It also includes efficiency features such as automatic reminders, alerts, emails, full reporting, etc.

Automatic reminders sent to non-responding

If the risk evaluation is organized in a workshop format, then TAB sends an invitation to participants with all required information

Workflow Structuring:

Reminder: None

Forms	Include	Answer individually	Workshop date and time	Duration	Location
Support data	<input checked="" type="checkbox"/>				
Description	<input checked="" type="checkbox"/>	<input type="checkbox"/>	02/13/2019 12:00 AM	30 minutes	TBD
Dependency factors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Risk factor projections	<input type="checkbox"/>				
Loss estimates	<input type="checkbox"/>				
Other	<input type="checkbox"/>				
Reminder	<input checked="" type="checkbox"/>				
Findings	<input checked="" type="checkbox"/>				

In a second step, the loss estimates can be organized for SMEs' responses individually (or in a workshop), to avoid multiple issues such as group thinking, influence of leaders, fear of looking unsmart and so on

The risk evaluation can structured to contain any of these elements as selected by the OpRisk manager: support data, dependency factors for correlations, loss estimates, mitigation analysis, Other (means additional tabs for more specific analysis), findings (regulatory, internal audit, etc.), reminders, etc.

Structured Scenario Analysis is designed on flexibility. It allows the user to define as many questions, question types, quantification methods, number of tabs...

The screenshot displays the configuration interface for Structured Scenario Analysis, divided into three main sections: Tab main configuration, Question configuration, and Case study configuration. Annotations highlight various features and their functions:

- Tab main configuration:**
 - Question order:** A dropdown menu for selecting the question order.
 - Tab name:** A text input field for naming the tab.
 - Question section:** A text input field for specifying the question section.
 - Number of questions in the tab:** A text input field for setting the number of questions.
 - Permits to include an attachment in the answer:** A checkbox for allowing attachments in the answer.
 - Permits selecting several elements from list:** A checkbox for allowing multiple selections from a list.
- Question configuration:**
 - Question order:** A dropdown menu for selecting the question order.
 - Section:** A text input field for specifying the question section.
 - Tooltip:** A checkbox for enabling a tooltip.
 - Type:** A dropdown menu for selecting the question type. The dropdown is open, showing options:
 - Explanation:** Does not allow an answer. May be used for inserting explanations.
 - Text:** Requires a text answer.
 - List:** Requires an answer in list format.
 - Closed question:** Requires selecting from a combo pick list.
 - Number:** Requires a number answer.
 - Range:** Requires a range answer, minimum and maximum.
 - List with filter:** Requires an answer from a long list allowing for filters.
 - Other scenario link:** Requires selecting from the list of other scenarios created.
 - Date:** Requires an answer from date calendar.
 - Allow multiple selection:** A checkbox for allowing multiple selections.
 - Attachment:** A checkbox for allowing attachments.
 - Question text:** A rich text editor for writing the question text.
 - Tooltip text:** A text input field for providing additional guidance.
- Case study configuration:**
 - Case study:** A text input field for specifying the case study.
 - Choose File:** A button for selecting a file.
 - No file chosen:** A label indicating no file has been selected.
 - Description:** A text input field for providing a description.

Structured Scenario Analysis allows to fully customize risk evaluation forms including the number and content of tabs, from very simple forms to lengthy ones

In the below example for conduct risk management a questionnaire has been created with tabs regarding “Support data”, “Dependency factors”, “Loss estimates” and so on

Index Scenario line: Conduct risk

Progress of scenario: Conduct risk - Conduct risk

Chat with SSA team Save

Conduct risk description Support data Dependency factors Loss estimates Mitigation analysis Risk and reward analysis Reputational Impact Operational Impact Regulatory Implications Findings

Scenario name	Description	Themes
Conduct risk	Is the threat of financial loss to an organization caused by the poor judgment of managers and employees.	

The next example TAB tool has been configured for model risk and governance and includes tabs regarding the model life cycle: “Development”, “Validation”, “Approval”, “Audit” and so on

Index Model evaluation: Credit Risk

Progress of evaluation: Credit Risk - Retail credit cards IRB PD model

Chat with SMRM team Save

Description of model Development Validation Model approval Audit Model monitoring and use Findings

Model name	Description	Themes
Retail credit cards IRB PD model	Measure PD of the retail credit cards portfolio in SA	

TAB provides multiple features for engaging your organization in obtaining quality and timely responses when evaluating scenario analysis

TAB permits a dynamic and flexible invitation process via email to include participants into the op and conduct risk evaluation process. TAB sends invitations via email to selected participants in risk evaluation including .ICS file (for the calendar), customised message and name of the rest of participants

The screenshot shows the TAB invitation interface with the following components and annotations:

- Participants :** A text input field containing the number "5". An annotation "Number of email recipients" points to this field.
- Name :** A text input field. An annotation "Include name to show in the tool instead of email address" points to this field.
- Workshop facilitator :** A dropdown menu. An annotation "Define a different workshop facilitator from default" points to this field.
- Allow simulation :** A checkbox that is checked. An annotation "Allow or not allow Monte Carlo simulation to SMEs" points to this checkbox.
- Include invited SMEs :** A group of six rows, each containing an email input field, a name input field, a radio button for "Workshop facilitator", and a checkbox for "Allow simulation". An annotation "Include invited SMEs" points to this group.
- Load a list of invitees from an Excel file :** A button labeled "Examiner...". An annotation "Load a list of invitees from an Excel file" points to this button.
- Include ICS file in email :** A checkbox. An annotation "Include ICS file in email" points to this checkbox.
- Introduction email text :** A text area containing the message: "Dear subject matter expert, you are requested to respond to the scenario analysis questionnaire regarding the risk scenario mentioned below. Please, comply with the indicated dates and assist to the workshops, as indicated in this invitation. You will not be receiving further instructions. Thank you in advance for your collaboration". An annotation "Introduction email text" points to this text area.
- Send invitations :** A blue button at the bottom right.

TAB provides a facility to review participants risk evaluation progress and permits to send them feedback emails for optimizing responses quality and response time

Include a .ICS file regarding a potential meeting with SMEs, including time, date, duration and location

Write email text to selected SMEs

Progress of scenario: Internal Fraud - Unauthorized Activity

Include .ICS file	Meeting date	Duration	Location
<input checked="" type="checkbox"/>	<input type="text" value=""/>	30 minutes	<input type="text" value=""/>

Participant	Completion date	Status	Description	Risk factor projections	Loss estimates	Risk and reward analysis	Response rate	Actions	
rafael.cavestany@theanalyticsboutique.com	2016-11-30	CONFIRMED	NOT_STARTED		COMPLETED	COMPLETED	<div><div></div></div> 62 %	Progress	✓
pepinferrari@gmail.com	2016-11-30	CONFIRMED	RETURNED		RETURNED	COMPLETED	<div><div></div></div> 62 %	Progress	✓
daniel.rodriquez@theanalyticsboutique.com	2016-11-30	NOT_STARTED	NOT_STARTED		NOT_STARTED	NOT_STARTED	<div><div></div></div> 0 %	Progress	✓
john.smith@theanalyticsboutique.com	2016-11-30	NOT_STARTED	NOT_STARTED		NOT_STARTED	NOT_STARTED	<div><div></div></div> 0 %	Progress	✓
peter.white@theanalyticsboutique.com	2016-11-30	NOT_STARTED	NOT_STARTED		NOT_STARTED	NOT_STARTED	<div><div></div></div> 0 %	Progress	✓

Multiple SMEs are requested to evaluate the same scenario individually to avoid known cognitive biases

The degree of progress of the different SMEs in responding to their questionnaire is easily tracked

The progress of individual SMEs can be reviewed in the actual form, approved, further information can be requested and so on

Select SMEs to send be sent email

Structured Scenario Analysis is full of proactive features: i.e. automated reminders for guaranteeing a timely response and actions from the organization

The screenshot displays a web-based reminder management tool. At the top, there's a 'Description' tab and a 'Reminder' tab. Below this, there are three reminder entries, each with a 'Number of daily reminders' input field.

Reminder 1:

- Subject: IFRS9 Model validation reminder
- Start/End date: 09/01/2018 - 12/31/2020
- Periodicity: 6 months
- Number of daily reminders: 5
- Message: By now you should have started the IFRS 9 model validation
- Sent to: P, Dinesh Kumar <Dinesh.Kumar.P@sc.com>; Radhakrishnan, Gokulakrishnan <Gokulakrishnan.Radhakrishnan@sc.com>; Wang 3, Qing <Qing.Wang3@sc.com>; S1, Kumar <Kumar.S1@sc.com>

Reminder 2:

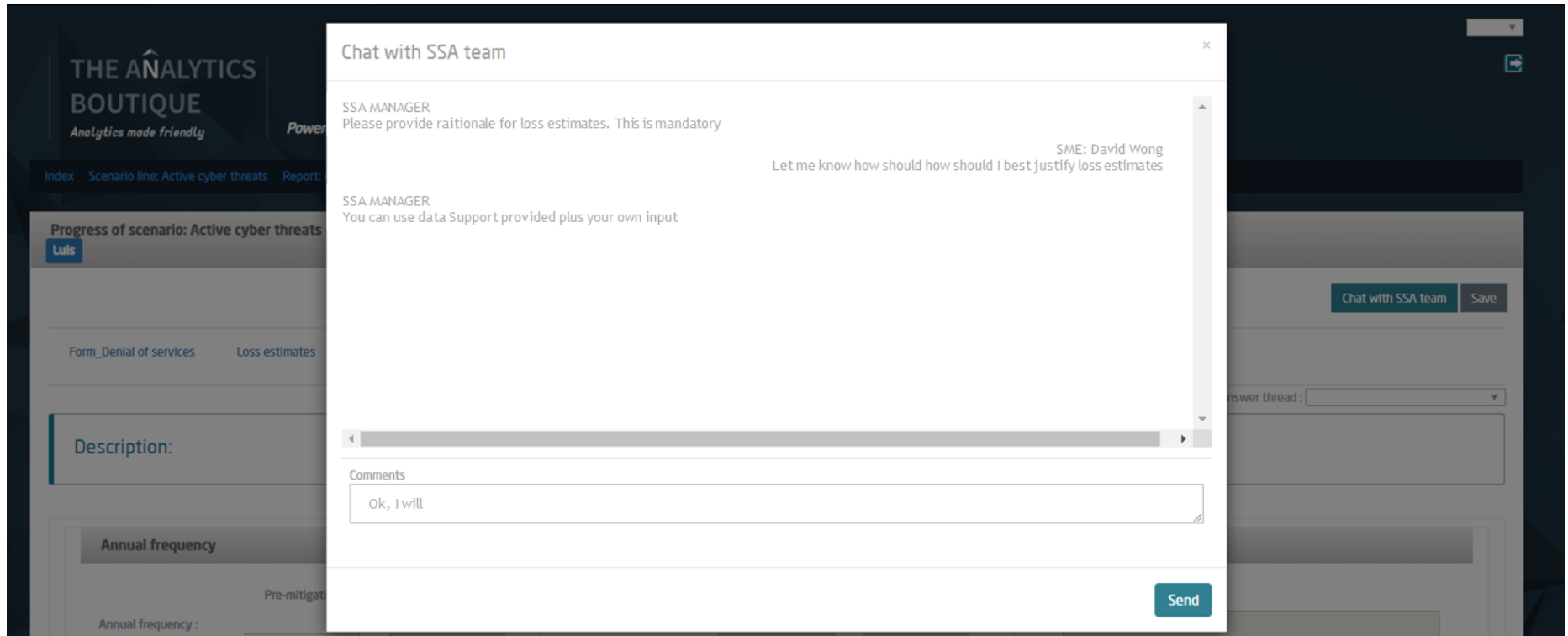
- Subject: IFRS9 Model recalibration reminder
- Start/End date: (Calendar overlay for September 2018 is shown, with the 21st highlighted)
- Periodicity: 1 year
- Number of daily reminders: 5
- Message: By now you should have started the IFRS 9 model recalibration
- Sent to: P, Dinesh Kumar <Dinesh.Kumar.P@sc.com>; Radhakrishnan, Gokulakrishnan <Gokulakrishnan.Radhakrishnan@sc.com>; Wang 3, Qing <Qing.Wang3@sc.com>; S1, Kumar <Kumar.S1@sc.com>

Reminder 3:

- Subject: IFRS9 documentation reminder
- Start/End date: (Empty input fields)
- Periodicity: (Empty dropdown)
- Number of daily reminders: (Empty input field)
- Message: (Empty text area)
- Sent to: P, Dinesh Kumar <Dinesh.Kumar.P@sc.com>; Radhakrishnan, Gokulakrishnan <Gokulakrishnan.Radhakrishnan@sc.com>; Wang 3, Qing <Qing.Wang3@sc.com>; S1, Kumar <Kumar.S1@sc.com>

The tool permits to create reminders for specific tasks in risk maintenance and management
 Tasks can be directed to specific stakeholders in the risk management chain
 These may include regular tasks as periodic re-evaluation, identification of new emerging risks...
 ... but also specific tasks as e.g. mitigation actions from validations to the responsible stakeholders, ...

It provides a chatting facility between the scenario manager and the subject matter expert, for expediting and maximizing the quality of answers obtained



Seed questions can be embedded into the questionnaire for assessing the experts skills in evaluating uncertain risk events and to weight their answers accordingly

Seed questions are questions included into the questionnaire to exam the skills of participating experts. The performance on in these seed questions is used to score the skills/knowledge of experts in predicting uncertain risk events. Such score is used to give more weight to best performing experts when aggregating answers

Definition of seed questions into the scenario questionnaire

The screenshot displays a questionnaire interface with the following components:

- Top Navigation:** Description, Loss estimates (selected), Mitigation analysis, Support data.
- Distribution shape estimates:** Includes checkboxes for Mode, Mean, Deviation, Skewness, and Kurtosis. A 'Seed' button is highlighted with a black box.
- Worst losses:** Includes a dropdown menu for 'Worst losses', checkboxes for 'Minimum loss' and 'Maximum loss', a text input for 'Worst loss in: [] years', and a 'Text for seed question:' input. A 'Seed' button is highlighted with a black box.
- Frequency of losses:** Includes a checkbox for 'Annual frequency' and a text input. A 'Seed' button is highlighted with a black box.

Arrows from the title 'Definition of seed questions into the scenario questionnaire' point to the 'Seed' buttons in the 'Distribution shape estimates', 'Worst losses', and 'Frequency of losses' sections.

The expert answers are aggregated based on their seed questions performance score and such aggregated answer is used for risk evaluation and modelling

Scenario analysis evaluations from multiple experts are aggregated to a single answer per Risk, based on the performance of each expert on the seed questions. Best performing experts are given more weight in the aggregated answer

SME answers are aggregated based on seed questions performance

The weight from the seed question performance can be overridden

Weight assignment to experts				
Participant	Expert performance score	Score override	Expert answer weight	Override justification
peter.mills	0.846	<input type="text" value="1"/>	0.6666666666666666	<input type="text"/>
john.smith	0.134	<input type="text" value="0"/>	0.3333333333333333	<input type="text"/>

Aggregated pre-mitigation loss estimates

In years	Losses	Overwrite
2	100.00	<input type="text" value="100"/>
5	200.00	<input type="text" value="200"/>
7	400.00	<input type="text" value="400"/>
25	600.00	<input type="text" value="600"/>
Annual frequency	5.00	<input type="text" value="5"/>

Rational for overwrite

Aggregated post-mitigation loss estimates

In years	Losses	Overwrite
2	50.00	<input type="text" value="50"/>
5	150.00	<input type="text" value="150"/>
7	200.00	<input type="text" value="200"/>
25	500.00	<input type="text" value="500"/>
Annual frequency	2.00	<input type="text" value="2"/>

Rational for overwrite

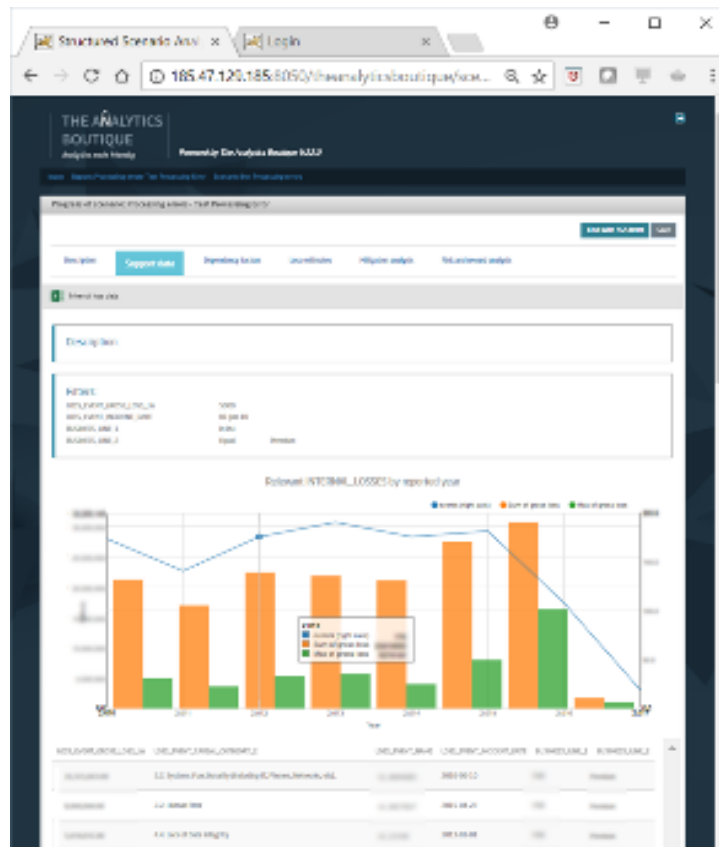
Scenario analysis relies on expert judgment which needs the mitigation of cognitive biases to guarantee a minimum quality of assessments

Biases with strong influence in expert based assessments	Structured Scenario Analysis features to mitigate biases
Need for closure bias	<ul style="list-style-type: none"> Risk scenario identification modules: an open question questionnaire to identify the list of largest risk concerns among selected experts and a close risk list questionnaire for voting and prioritizing risk scenarios
Herding or group thinking bias	<ul style="list-style-type: none"> Permits answering scenario questionnaire in a workshop or each expert individually, to avoid group thinking Answering in various steps: risk description workshop, experts individual answers, risk mitigation
Anchoring bias	<ul style="list-style-type: none"> The scenario analysis questionnaire contains a section to relevant internal and external losses and other risk management metrics to mitigate SME's inadequate anchors and pre-existing references
Denial bias	<ul style="list-style-type: none"> Links risk evaluation and risk mitigation permitting to justify the losses and errors by proposing remediation and calculating the NPV of action plans, to facilitate a risk exhaustive identification and proper evaluation
Confirmation bias	<ul style="list-style-type: none"> In a first phase, before answering individually loss estimates, a workshop analysis of scenario causes and consequences is performed to eliminate pre-existing beliefs and establish a common understanding
Authority bias Natural and/or formal leaders Fear of looking unknowledgeable	<ul style="list-style-type: none"> Individual answering of risk evaluation questionnaire (as an alternative to workshop) to avoid the influence of formal or natural leaders and mitigate the fear of looking unknowledgeable in front of peers and superiors Possibility of structuring the scenario workshop in phases: 1) Joint workshop to present the risk and support data 2) Individual answering of loss estimates 3) Individual/workshop answering of mitigation 4) answer aggregation
Lack of involvement Dissimilar degree of skills among experts	<ul style="list-style-type: none"> Seed questions (a question whose answer is known) to examine the expert skills in evaluating uncertain risk scenarios permitting to identify those experts with better risk prediction skills Linking risk evaluation and risk mitigation to motivate participating experts
Prevalence of intuition vs analysis	<ul style="list-style-type: none"> Enforcing robust analysis: analysis of the causal pathway, risk drivers, dependency factors and more Creating the appropriate references by providing the internal and external losses and other OpRisk metrics
Sense of lack of usefulness	<ul style="list-style-type: none"> Linking risk evaluation with risk mitigation and the evaluation of the NPV of action plans Permits to justify the business case of mitigation and insurance, by the NPV of required investment/costs
Lack of correlation approach	<ul style="list-style-type: none"> Factor model correlation approach driven by SME judgment elicitation provides a solid and transparent correlation matrix, for scenario analysis capital modelling

TAB allows to present supporting data such as ILD, ED and BEICFs, to help experts in analysing risks and help to mitigate anchoring, recency and other biases

Within the scenario analysis questionnaire, it is possible to include support data to help experts in their evaluations greatly improving the evaluation quality, such as internal and external loss data, KRIs, KCIs, KPIs, case studies...

Internal and external data relevant to the risk evaluation



RCSA relevant to the risk scenario

Internal loss data

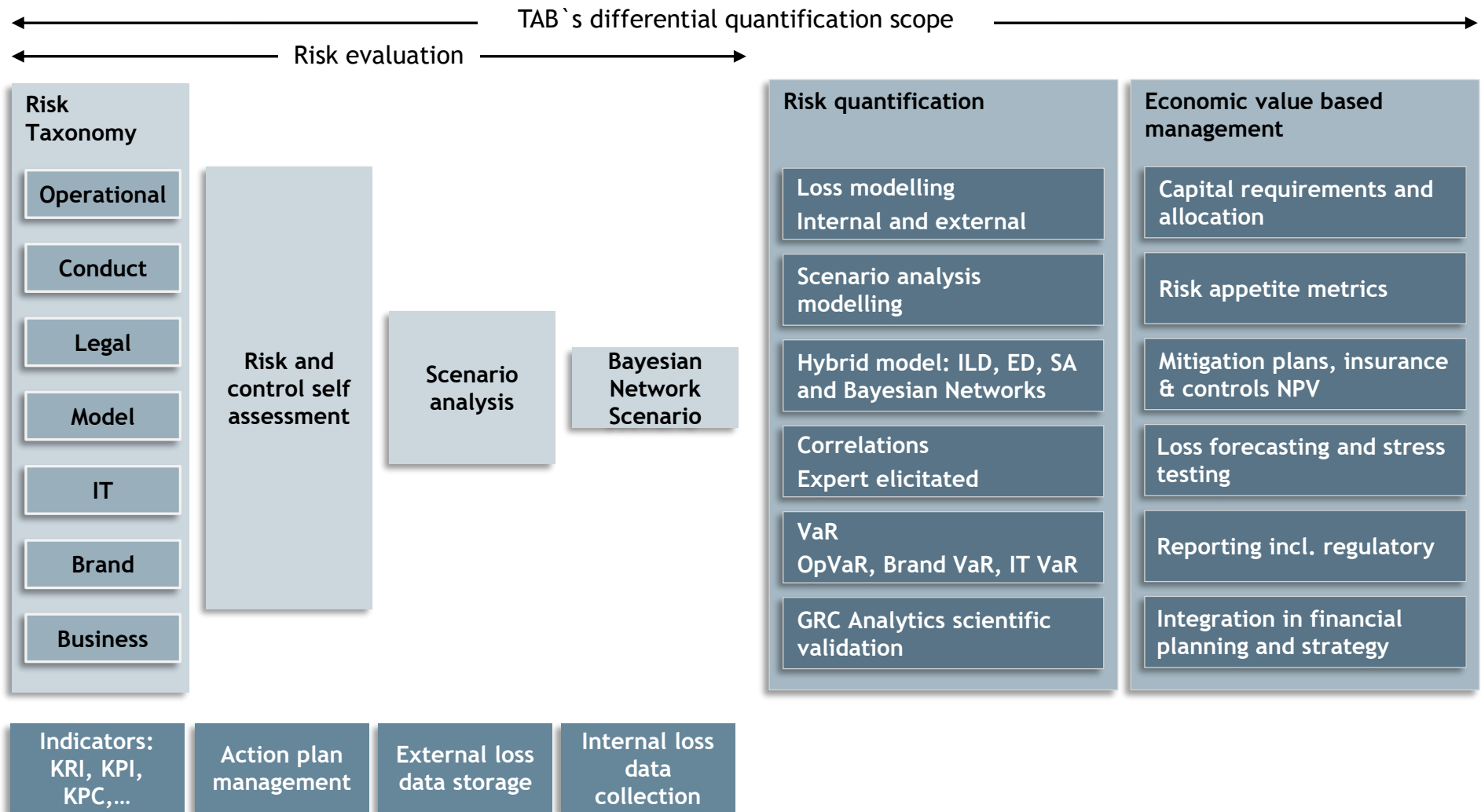
Show 10 entries

Id	Gross_Loss	Other_Recoveries	Net_Loss	Loss_Date	Accounting_Date	Business_Line	Business_Unit	Primary_Cause	Reference
144	161.5964	0	161.5964	2004-01-29	2003-03-03	Retail	BU 5	External	360
637	427.0909	0	427.0909	2003-05-07	2003-05-07	Retail	BU 16	External	1320
719	1026.77	0	1026.77	2004-04-13	2004-04-16	Retail	BU 10	External	1462
855	198.1818	198	0	2004-04-23	2004-04-28	Retail	BU 5	External	1662
1063	353.8727	353	0	2003-06-07	2003-06-10	Retail	BU 5	External	1962
1197	1504.8773	0	1504.8773	2004-05-15	2004-05-15	Retail	BU 16	External	2127
1219	5011.082	0	5011.082	2004-05-17	2004-05-17	Retail	BU 16	External	2151
1543	181.8182	181	0	2004-05-31	2003-07-04	Retail	BU 5	External	2633
1828	153.4436	0	153.4436	2003-07-01	2003-08-05	Retail	BU 5	External	3212
1958	113.5209	0	113.5209	2003-04-09	2004-07-14	Retail	BU 16	External	3433

Showing 1 to 10 of 100 entries

Previous 1 2 3 4 5 ... 10 Next

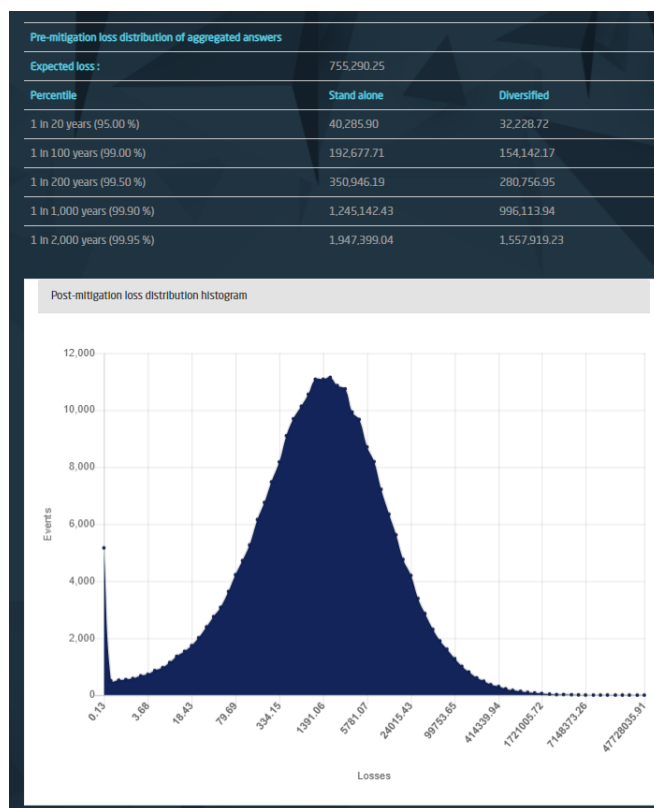
TAB's quantification methodologies permit to translate GRC metrics into the money value of risk easily integrating such metrics into the daily management



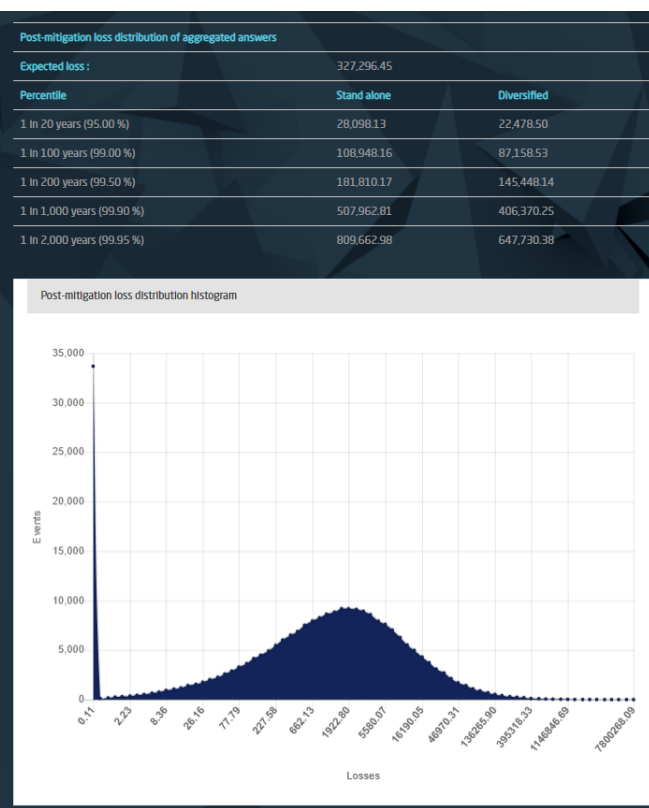
TAB permits an on-the-fly Monte Carlo simulation of risk for evaluating the risk profile before and after mitigation and determine the effectiveness of controls

TAB enables Analytics to the first line of defence to evaluate the risk profile and the impact of mitigation, using an on-the-fly Monte Carlo simulation feature. This helps to change the internal culture of the institution towards scientific risk evaluation and robust risk mitigation decisioning

Pre-mitigation risk profile




Post-mitigation risk profile



The mitigation plan Net Present Value (NPV) can be calculated in order to build the business case for justifying implementation and required investments

TAB enables via its web application a feature to calculate the NPV of mitigation actions. The differences in the risk profile of before and after mitigation together with the implementation cost of the control permits to determine whether the action plan add or not net present value to the institution

Mitigation plan NPV analysis 

NPV parameters

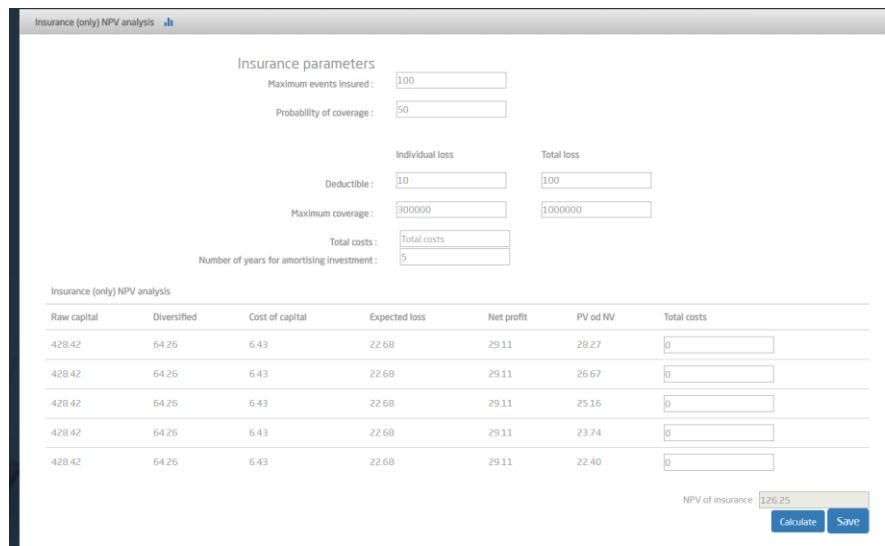
Cost of capital :
Diversification :
Discount rate :
Capital percentile :
Number of years for amortising investment :

Raw capital	Diversified	Cost of capital	Expected loss	Net profit	PV od NV	Total costs
378.94	56.84	5.68	27.91	33.60	32.63	<input type="text" value="0"/>
378.94	56.84	5.68	27.91	33.60	30.79	<input type="text" value="0"/>
378.94	56.84	5.68	27.91	33.60	29.04	<input type="text" value="0"/>
378.94	56.84	5.68	27.91	33.60	27.40	<input type="text" value="0"/>
378.94	56.84	5.68	27.91	33.60	25.85	<input type="text" value="0"/>

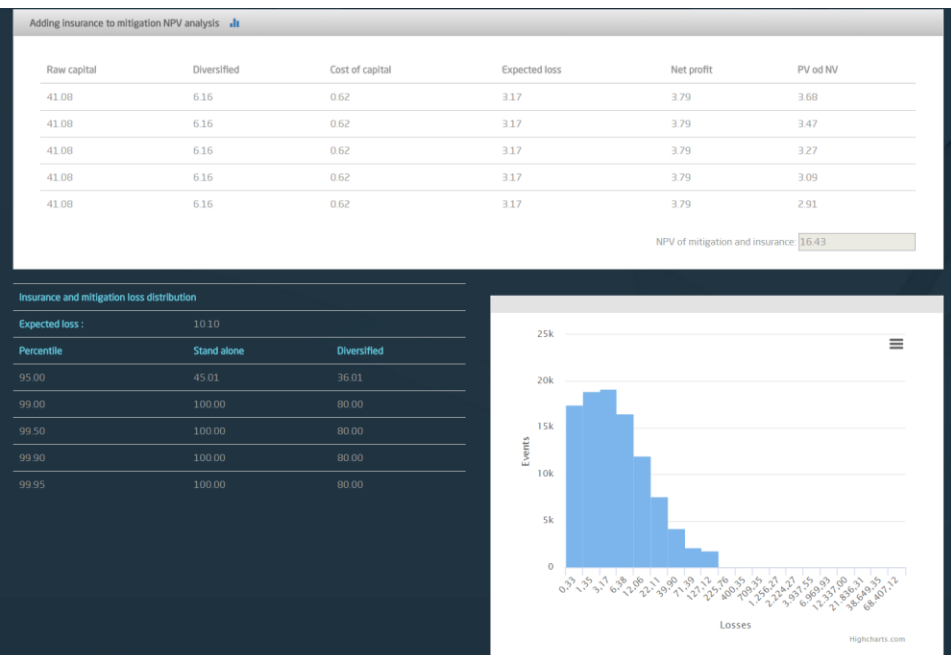
NPV of mitigation :

The impact of mitigation plans and insurance programs on the scenario risk profile can also be evaluated and its NPV calculated

NPV and loss analysis applying insurance only



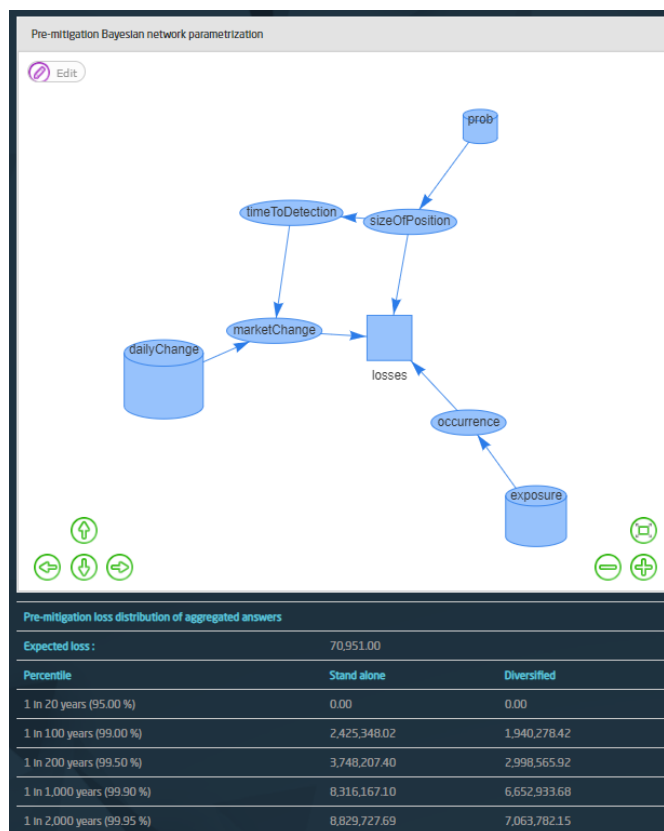
NPV and loss analysis with insurance in the mitigation plan



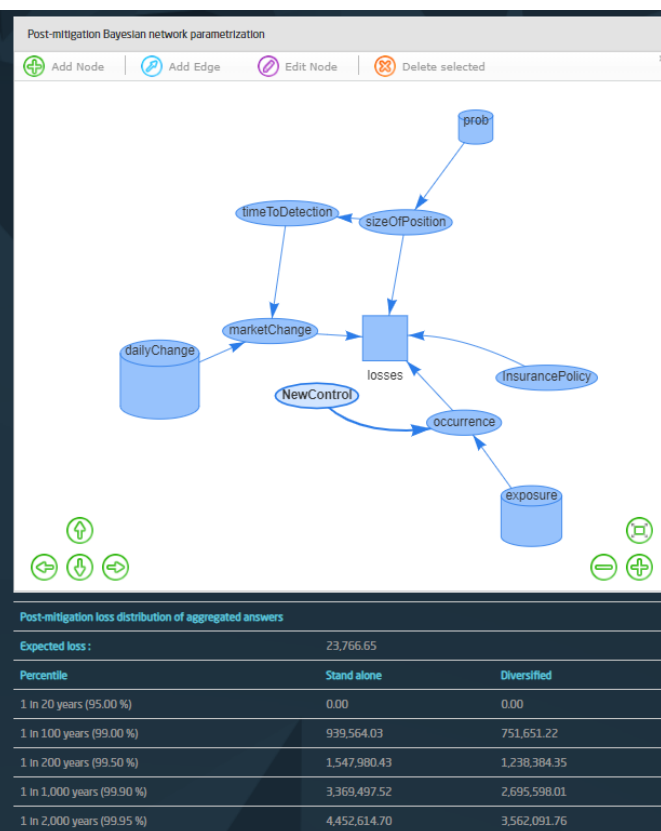
SSA permits to model scenarios using a variety of methods including Bayesian networks for those scenarios most sensitive to current exposures or in which detailed analysis is needed for a precise estimation of losses or mitigation impact

A complete and efficient modelling of scenario analysis requires the combination of modelling methods. Bayesian networks may be used in exposure sensitive scenarios or requiring a precise loss estimation or mitigation NPV. Less critical scenarios might be modelled using direct and less resource intensive methods such as direct estimation of losses (worst loss in 10 years...)

Pre-mitigation analysis



Post-mitigation analysis



Structured Scenario Analysis offers action plans management, findings registers and controls for an effective management

Risk measurement would be an Academic exercise if there are no decisive actions towards Risk management/mitigation. Our solution is built around such believe and provides multiple means to evaluate the effectiveness of controls and the management of mitigation actions

Findings forms

Progress of evaluation: Credit Risk - Retail credit cards IRB PD model

Chat with SMRM team Save

Description of model Development Validation Model approval Audit Model monitoring and use Findings

Findings

Number of finding *: 3

Finding name	Type of finding	Priority	Finding ID	Finding description	Recommend/resolution	Responsibility	Status	Closure date	Reason for closure
Documentation deficiency	Internal Audit	Medium	1	Model documentation lack	Enhance documentation a	Model development team	CLOSURE_PROPOSE	03/12/2019	New documentati
Backtesting Issues	Validation	High	2	Model failed in specific se	Evaluate the redevelopment	Model development team	IN_PROGRESS	08/31/2019	N/A
Model date overdue	Validation	Low	3	Model has not been updat	Based on finding 2, decide	Model validation and deve	OPEN	08/31/2019	N/A

SSA provides the means to determine correlations across risk scenarios through a configurable factor model elicited by SME judgment

- SMEs provide their estimate on the influence of the different external environment factors that impact crystallisation of risks. These estimates are later weighted by the seed questions performance score obtained by each SME
- The final risk scenarios correlation matrix is calculated with the correlations across the dependency factors and the weight of each factor in the risk scenario

Dependency factors		
Employees and vendors	<input type="text" value="20"/> %	The quality and ability of the institution's employees, vendors and other resources;
Business complexity	<input type="text" value="0"/> %	The complexity and riskiness of the business, products and processes they use to deliver them;
Degree of automation	<input type="text" value="20"/> %	The degree of automation of the product processes and capacity of the institution for automation;
Legal environment	<input type="text" value="0"/> %	The legal and regulatory environment of the business;
Market evolution	<input type="text" value="10"/> %	The evolution of the institution markets, including the diversity and sophistication of its customers and counterparties, the liquidity of the capital markets it trades in and the reliability of the infrastructure which supports those markets.
Idiosyncratic	<input type="text" value="50"/> %	A structural or behavioral characteristic peculiar only to this scenario with no correlation with the other scenarios.

Definition of risk factor to guide SMEs

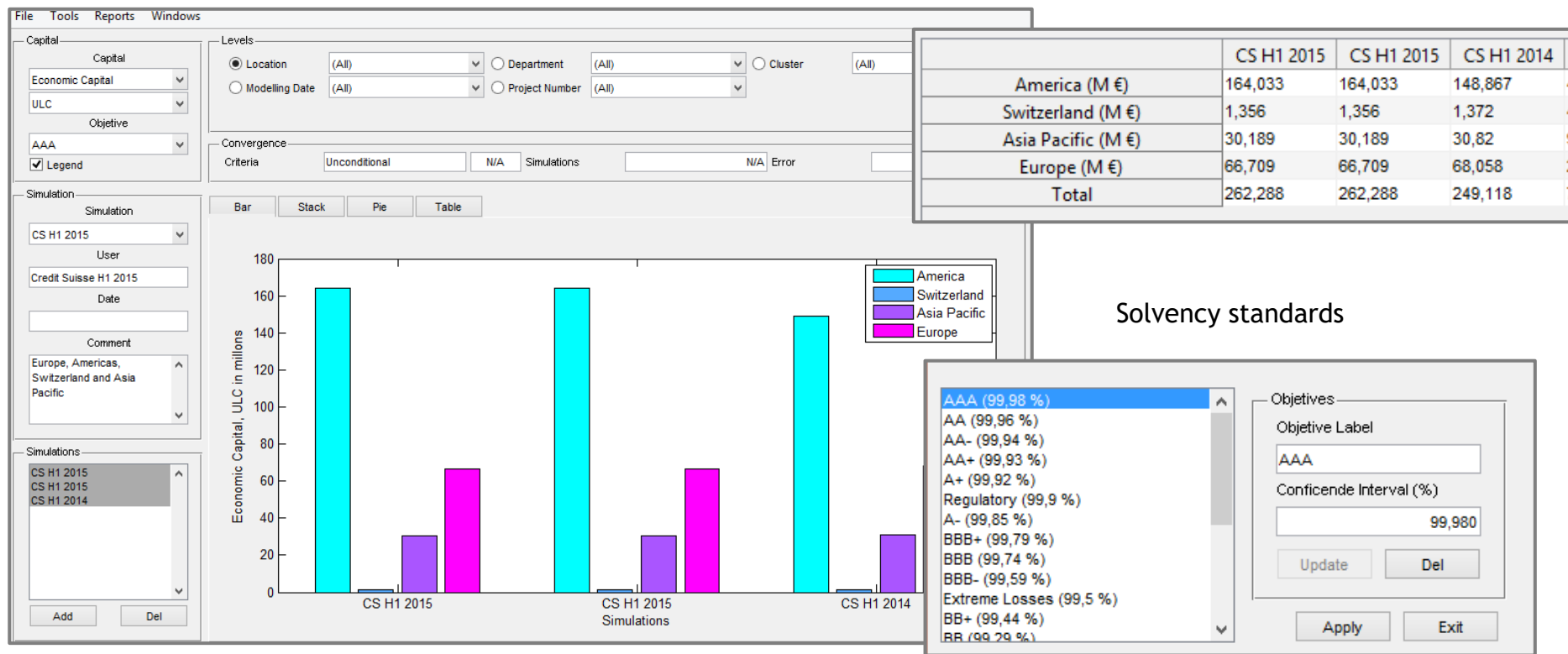
SMEs provide their estimates on the influence of the risk drivers in the scenario

Risk factor name

Finally, through the use of scenario modeling and Monte Carlo simulation, SSA produces capital estimates and other risk management metrics

Finally, capital is allocated following multiple methodologies (Euler Allocation, contribution to expected shortfall, etc.). The module for capital reporting permits the simultaneous representation of multiple runs performed at different time, different features, etc.

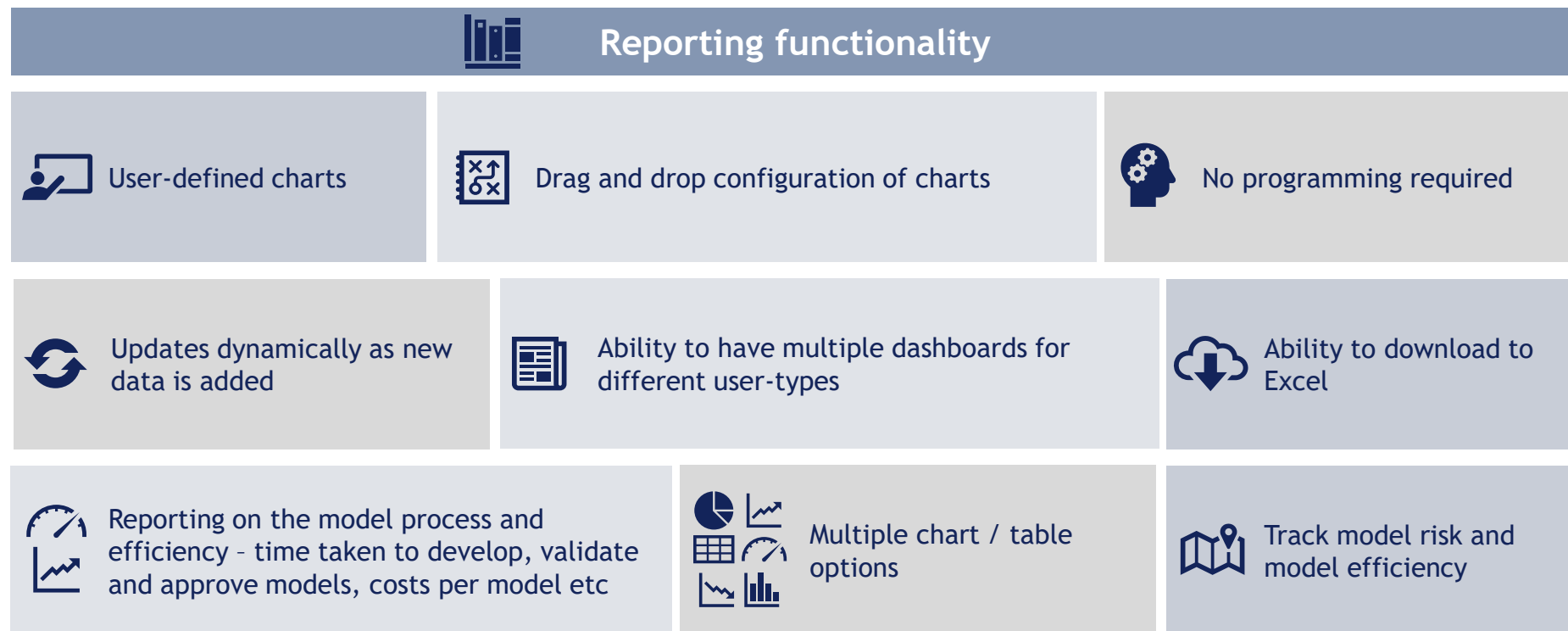
Graphical representation of capital allocation



Our GRC Analytics are flexible and can be applied across other GRC Risk categories such as BrandRisk and obtain Brand VaR or IT Risk



Structured Scenario Analysis is able to provide user defined reports and dashboards in an easy and intuitive way so that the organisation can track both model risk and efficiency across the model lifecycle



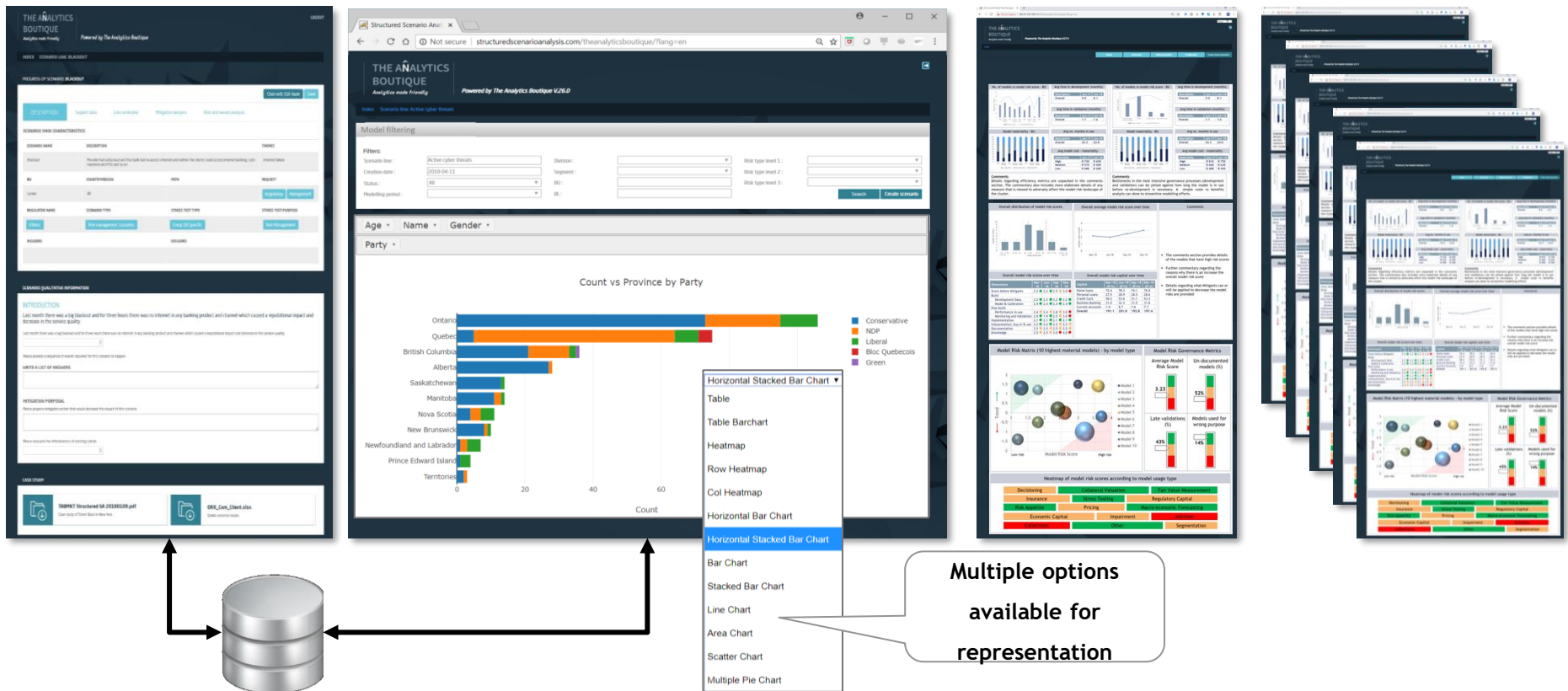
Risk management and measurement data is stored in Structured Scenario Analysis database and can be reported as desired using pivot tables and dashboards

1 Information is captured by users or produced by GRC Analytics forms and stored in a database

2 Pull information from database and create tables and charts as required using integrated reporting module

3 Graphs are grouped into dashboards

4 Multiple dashboards can be created



Extensive information about which user activity gained accessed / created / altered workflows and their components provides comfort for audit and governance structures

General activity log including all scenarios and users

Agent	Scenario line	Scenario name	Creation date	Actions
theanalyticsboutique@gmail.com			2019-03-25 06:25:42.046	The user has logged in
theanalyticsboutique@gmail.com	Active cyber threats			
theanalyticsboutique@gmail.com	Active cyber threats			
theanalyticsboutique@gmail.com	Internal Fraud			
theanalyticsboutique@gmail.com				
pepinferrari@gmail.com				
pepinferrari@gmail.com				
pepinferrari@gmail.com	Test 2			
pepinferrari@gmail.com	Internal TAB			
theanalyticsboutique@gmail.com				

Activity log specific to one scenario

Agent	Scenario line	Scenario name	Creation date	Actions
daniel	Test		2019-03-19T13:53:58Z	Scenario line consultation
daniel	Test		2019-03-19T13:53:44Z	Scenario line consultation
daniel	Test		2019-03-19T13:53:20Z	Scenario line consultation
daniel	Test		2019-03-19T13:51:36Z	Scenario line consultation
daniel	Test		2019-03-19T13:51:10Z	Scenario line consultation
daniel	Test		2019-03-19T13:48:02Z	Scenario line consultation
daniel	Test		2019-03-19T13:47:07Z	Scenario line consultation
daniel	Test		2019-03-19T13:46:10Z	Scenario line consultation
daniel	Test		2019-03-19T13:44:29Z	Scenario line consultation
daniel	Test		2019-03-19T13:44:09Z	Scenario line consultation

Scenario name	Status	Creation date	End date	Actions
Testing	COMPLETED	2019-01-29	2019-02-28	Design Form Progress Aggregation Close Approve
Test_workshop_loss2	COMPLETED	2019-01-02	2019-01-31	Design Form Progress Aggregation Close Approve
Test_workshop_loss	COMPLETED	2019-01-02	2019-01-31	Design Form Progress Aggregation Close Approve
Metric	COMPLETED	2019-01-02	2019-01-31	Design Form Progress Aggregation Close Approve
Test_loss_pepe	COMPLETED	2019-01-02	2019-01-31	Design Form Progress Aggregation Close Approve
Test_number2	COMPLETED	2019-01-02	2019-01-31	Design Form Progress Aggregation Close Approve
Test_number	COMPLETED	2019-01-02	2019-01-31	Design Form Progress Aggregation Close Approve
Test_full_2	WIP	2018-12-28	2019-03-30	Design Form Send Invitations Progress Aggregation Risk & Reward X
Test_loss_estimates	WIP	2018-12-28	2019-05-24	Design Form Send Invitations Progress Aggregation Risk & Reward X
Loss	COMPLETED	2018-12-21	2019-01-31	Design Form Progress Aggregation Close Approve

All documents used or captured such as case studies or attachment to answers are consolidated into a document repository report

Our solution creates a document inventory with all documents used for providing an answer or the case studies attached to froms for informing expert answers

Model categories

Show 10 entries

Search:

#	Model Id	Version	Document Status	Category	Model name	Date	Risk type level 1	Model type	Materiality	Region	Name	Description	Actions
1	161		Final	Market Risk	Balance Sheet Management	2019-02-28					Risk scoring factors v1.xlsx	Risk scoring	Download
2	160		Final	Market Risk	VaR	2019-02-28					Model Data v4.xlsx		Download
3	162		Final	Credit Risk	Retail credit cards IRB PD model	2019-04-02		IRB models	Medium		Model Document Inventory v2.xlsx		Download
4	163		Final	Credit Risk	Retail credit cards IRB PD model	2019-04-02		IRB models	Medium		Guide scenarios.docx		Download

Showing 1 to 4 of 4 entries

Previous

1

Next



Thank you.

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