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How to get more value from Stress and Scenario Testing

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26 October 2018

Our central topics today

- Why focus on Stress and Scenario Testing
- How to get more value from Stress and Scenario Testing
  - Protection
  - Growth
  - Efficiency
- The future of Stress and Scenario Testing – a vision

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Introduction

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Stress and Scenario Testing (SST)

- An integral part of the insurance risk management system
- Far from a “pain-free” process
- Rarely is it continuously embedded into business processes to help drive decision making

What Firms Are Saying About Stress and Scenario Testing

“We only run interest rate sensitivities properly once or twice a year due to difficulty in calibrating”

“To reflect the burden, in 2018 we are setting up a small team specialised in running the SST models, separate from analysis and reporting”

“We run sensitivities twice a year. We tend to use these to predict Solvency in between”

“Business planning vs. Economic Capital vs. Solvency II, [there] may be an opportunity for efficiency”

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SST – Why focus on it now?

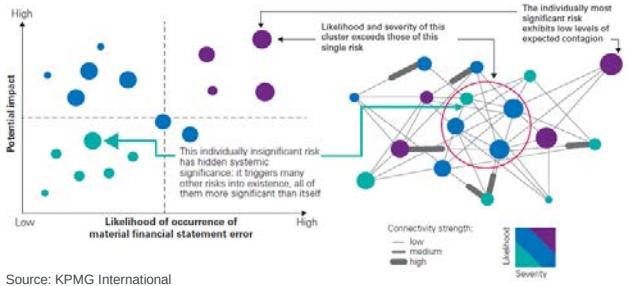
Regulatory drivers

As well as increased focus on the robustness of firms' SST programmes, the UK regulatory landscape continues to demand more analysis using SST:

- PRA supervisory statement 4/18
  - Risk appetite
  - Business and financial planning
  - Dividend suitability and sustainability
- Recovery and resolution planning (RRP)
- Operational Resilience

Commercial and internal drivers

- Risk exposures are changing and becoming more connected
- New technology = new opportunity
- Cost reduction
- Better decision making



Source: KPMG International

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How to get more value from SST

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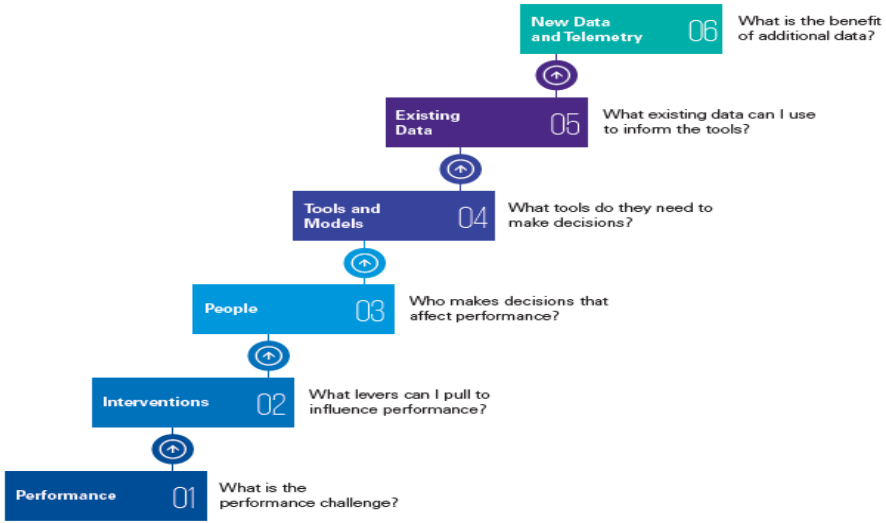
We see three areas in which value can be increased

- **Protection**: Helping firms to understand and plan for adverse scenarios and developments
- **Growth**: SST embedded into decision-making and strategy to help to support growth
- **Efficiency**: Enhancing the ability to run more stresses and scenarios, more quickly or with less effort

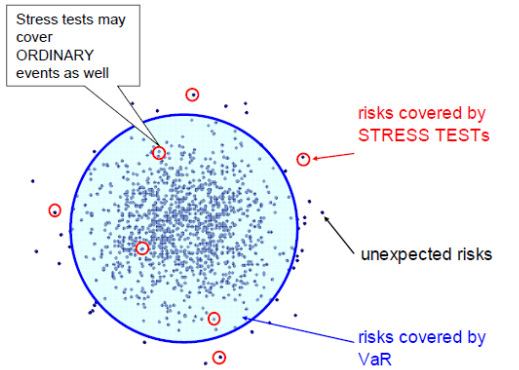


Source: KPMG International – "Delivering long-term value in E&P"

SST for Protection

Whilst most firms have well established SST programmes focussed on understanding downside risk, there is often a trade off between capability/capacity and ambition. Key challenges include:

- Availability of the right data;
- Precision vs. speed;
- Tunnel vision and scenario selection; and
- Modelling capacity.



Source: Bank of Japan – Yuko Kawai – "Stress Testing at major financial institutions"

As risk exposures change and become more dynamic, SST will also need to change to reflect this

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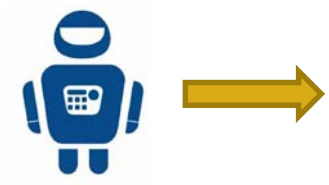
Example case : SST for Protection

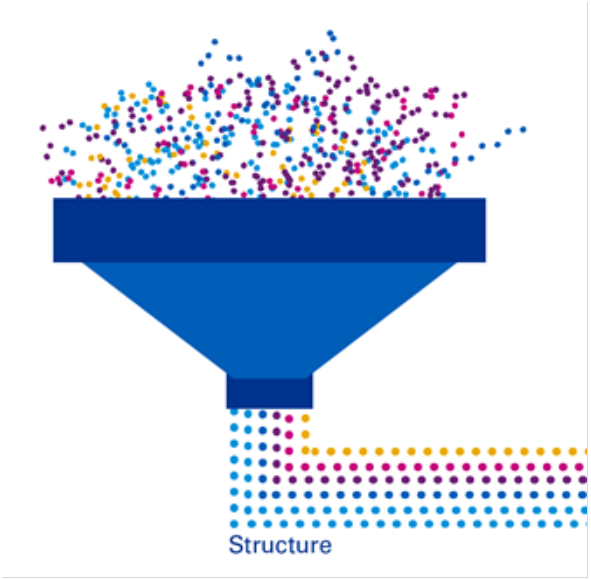
Integrating additional data sources

- Balance of internal and external data
- Using new data solutions to clean data
- Using robotics to automate data feeds

In the future

- Using artificial intelligence to help to parameterise and calibrate SSTs





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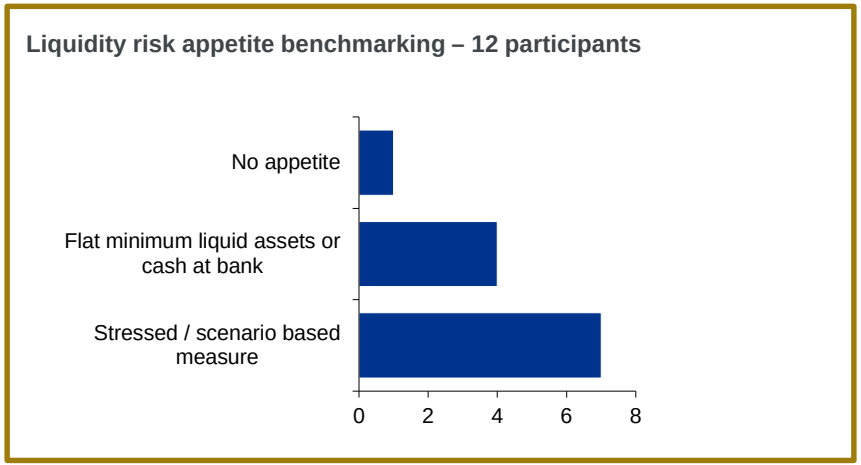
Example case: SST & Liquidity risk

Using SST to better understand liquidity risk

- Drivers for increased focus on liquidity in GI
  - More complex group structures
  - Increased frequency of cat events
  - Move into less liquid assets
- Current risk appetite measures range from very simplistic to quite complex
- Trend is moving towards more complex stress measures that closely link to the drivers of liquidity risk within asset and liability portfolios



Source: KPMG P&C Insurance Risk Appetite Benchmarking

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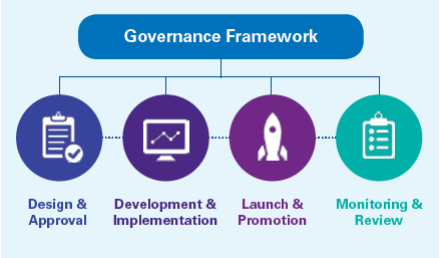
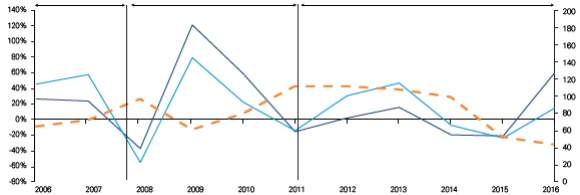
SST to support growth

How can SST play a key role in strategic and commercial decision making





Consider the right metrics linked to strategic priorities

Systematically embed SST into business processes

Focus on a range of short and longer term actions

SST for better decisions

- Arming those that make day to day decisions with more info on the impact to key metrics
- Moving to a world of ‘what if’ scenario capability
- Being directionally correct may be better than being accurate

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Source of graphics: KPMG International

Driving increased efficiency in SST

The status quo is eroding

- External and internal pressures are forcing change in Actuarial and Risk
- Traditional workflows and methods become outdated
- New modelling is creating the ability to move at pace

Automation

- Automation can help transform SST from “onerous” to “smooth”
- Generate ad-hoc or bespoke information
- Finance functions are fully embracing automation – what about Actuarial and Risk?
- Danger of being left behind! Options are wide ranging: Big Data, Analytics, Machine Learning, Desktop Automation, …

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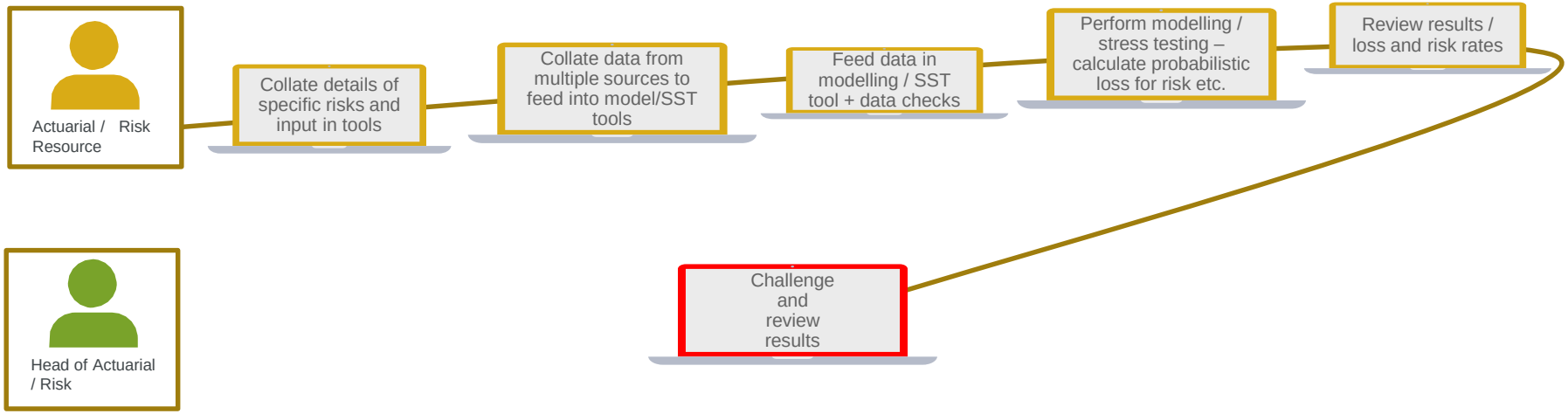
Very simplified example for SST process – before automation



High manual effort collating and inputting risk data/hazard information	**High FTE costs in Actuarial / Risk resource performing low value-adding activities**	**Data quality issues due to significant manual effort (data input, data preparation, etc.)**	**Time spent on reviewing and remediating data errors**

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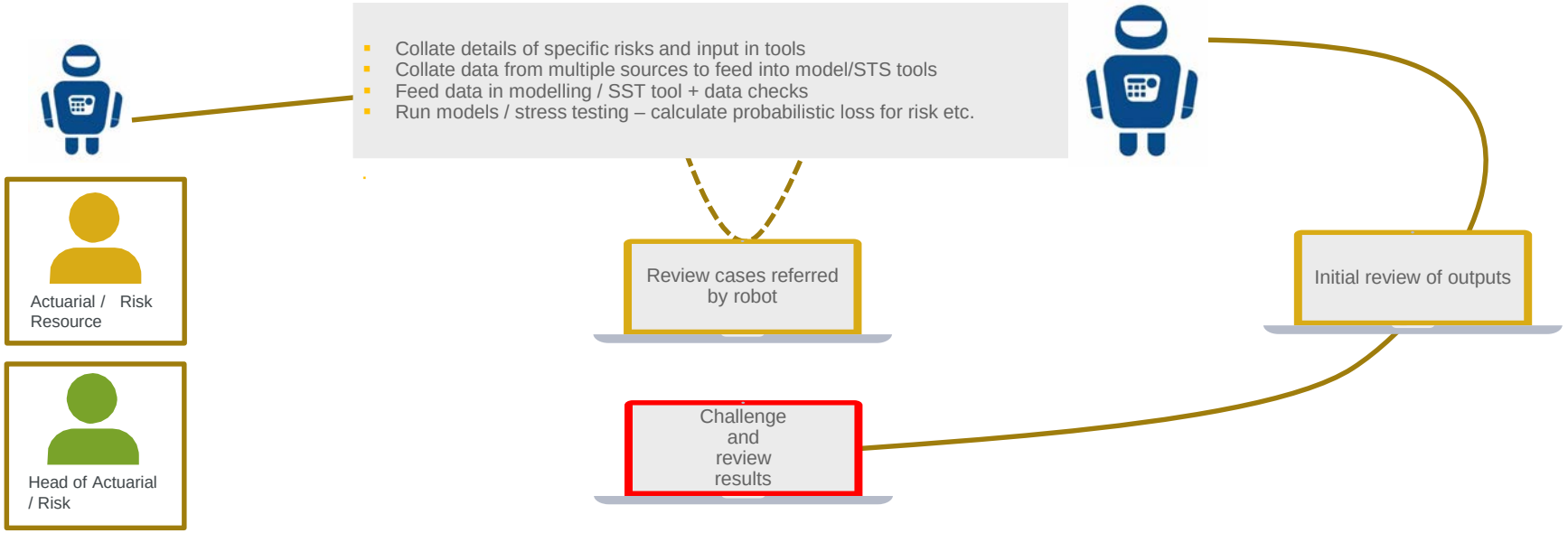
Very simplified example for SST process – post automation



FTE-driven cost savings due to overall decrease in time required	**Risk Resource focuses on higher value activities**	**Reducing errors (errorenous data, etc.) and therefore higher SST/model quality**	**Less time and effort spent on reviewing and remediating data errors**

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Changing methods for changing demands?

Data visualisation

- Excel – “trusted” and “proven” method of choice for most but also very limited

Big things in 1987…. 31 years ago

Reagan challenges Gorbachev to 'tear down' Berlin Wall, June 12, 1987

Microsoft releases Excel..

- Modern data visualisation tools help to plug the gaps in Excel – and more
- Rapid unprecedented analysis
- Bespoke ways of delivering and depicting results
- Multi user access across the whole of global insurance groups

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Changing methods for changing demands?

Data visualisation

- Demo of a PPO dashboard

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Changing methods for changing demands?

Ad-hoc information – are you ready?

- How are last year's SST results helping in today's decision making?
- How quickly can you react to unforeseen events?

What about?

- Establishing smooth, technology enabled, SST processes?
- Automated and in-depth performance and risk dashboards?
- AI driven scenario generators feeding your stresses?
- New internal data sources and granularity?




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The future of SST – a vision

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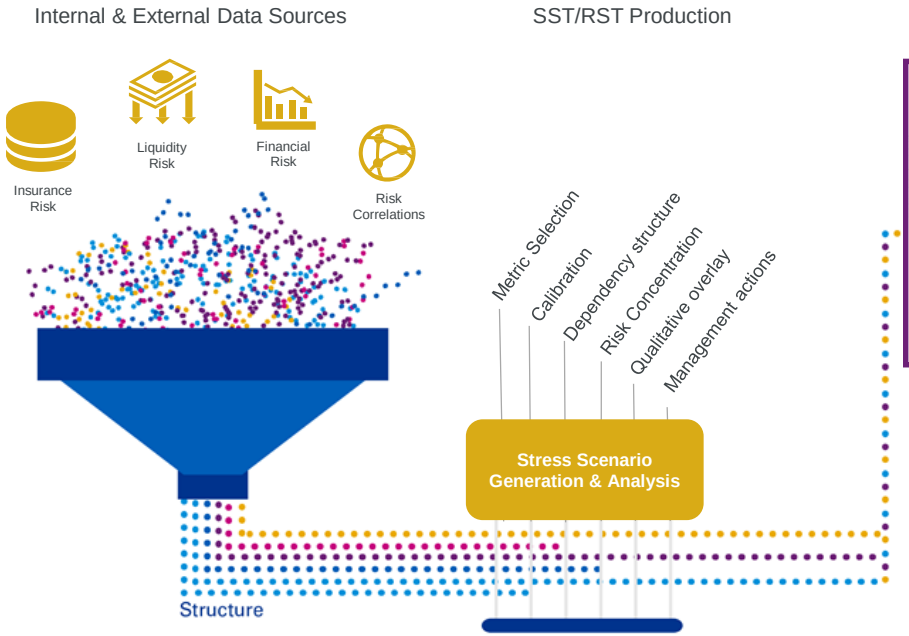
Simplified SST example

Increased Depth of Insight Using Additional Data Sources & Risk Visualisation



Benefits

- Consistent inputs with audit trail
- Greater granularity of reporting
- Easy identification of trends
- Greater understanding of management action impacts
- Less bias and tunnel vision risk

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An example for a “bot” ecosystem

blueprism ….to manage the “bots” and interact with external programs (e.g. R etc.)

Appian ….to manage the tasks referred to humans for manual intervention

SST bot

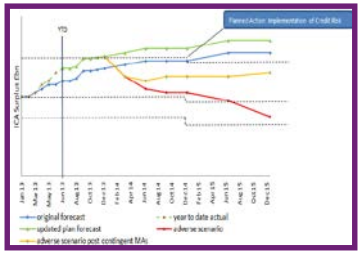
Assumptions bot

BEL bot

Risk Margin bot

SCR bot

SST output / Visualisation



SFCR bot

ORSA bot

alteryx

Automate inputs (incl. data formatting)

R python julia

Code calculations

Qlik tableau Power BI

Data visualisation / analysis

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What to take away

- Running SST annual / semi-annual, regardless of how robust an exercise, limits its potential
- When efficient and flexible, SST is a powerful tool and a key enabler for decision making
- Data is key. Invest in it!
- Explore and embrace new technologies and options. The tools are there, make sure to use them to your advantage. (hint: Banking already is….)

The vision

- Proof of concepts are happening now
- Operational within 1 – 3 years
- Experience based extrapolations from similar successful projects indicate:

  FTE savings potential of ~ 25% - 34% across functions / service lines

  Data quality management or data input ~ 40% - 80% savings potential

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Questions

Comments

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