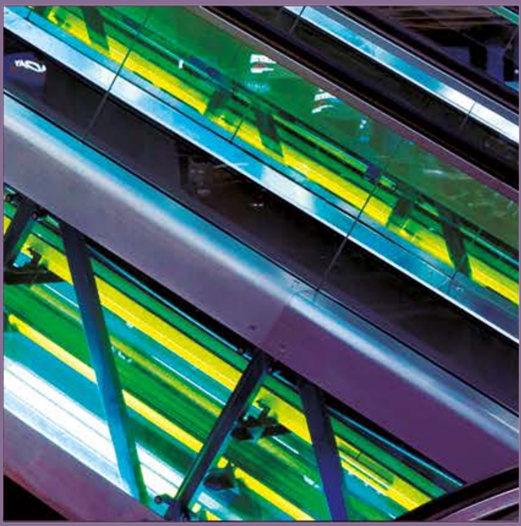

‘V’ IS FOR VALUE:

HOW DO INSURERS TAKE BACK VALIDATION?

NOVEMBER 2017

Prepared on behalf of the LMA Chief Risk Officers (CRO) Committee

INSIGHT CONSENSUS INFLUENCE

Contents

1. Foreword from Lloyd's Market Association

The purpose of the Lloyd's Market Association (LMA) is to identify and resolve issues that are of particular interest to the underwriting community and, working in partnership with the Corporation of Lloyd's and other partner associations, to influence the course of future market initiatives.

The LMA Board's long-term strategic objectives are to:

- Increase the flow of profitable business into the market
- Maintain capital flexibility
- Reduce costs.

The LMA's agenda is driven by and on behalf of its members - the Lloyd's underwriting community - many of whose staff freely give up their time to participate on LMA committees and business panels.

"As Chair of the LMA Chief Risk Officers Committee, I would encourage all those involved in the internal model governance and validation process, at board, management and functional level, to take on board the key messages from this report as a means of deriving greater understanding and value from their investment in the validation process.

"I would also like to thank all those who gave their time to create this paper. Without market input, the LMA and its committees would not be able to provide valuable insights."

Alex Hindson, Chair – LMA Chief Risk Officers Committee

2. Executive Summary

The aim of this paper is to generate a debate within the Lloyd's market on the purpose of, and value created by, internal model validation and to ensure that each managing agency is able to deliver value-adding insights on the effectiveness of their internal models to their boards and key stakeholders.

The paper is targeted at stakeholders who consider themselves to be consumers of validation reports within the Risk and Actuarial communities, as well as members of boards, Risk Committees and Internal Model Committees within Lloyd's managing agencies, the Prudential Regulatory Authority (PRA), the Society of Lloyd's and fellow Chief Risk Officers (CROs).

The paper is timely as the Lloyd's market enters the early stages of 'business as usual' since Solvency II implementation and Lloyd's moves into a cycle-based approach. All sides of the industry, including regulators, are coming to terms with how to ensure this is a sustainable and value-adding process.

The report draws on surveys of Lloyd's market CROs and other managing agency directors. Concerns remain on all sides that validation reporting and testing is a convoluted process, time-consuming to produce and read, and yet fail adequately to inform and assure boards and stakeholders.

Our overriding conclusions are that internal model validation should:

1) Be focused on outcomes rather than the process.
2) Be risk-based and proportionate to the exposure to 'Model Risk'. Consideration should be given to the cost-effectiveness of the process.
3) Differentiate effective board governance and oversight from regulatory reporting. The length and complexity of the report needs to reflect the specific target audience in each case.

These conclusions are supported by the findings of two surveys carried out whilst preparing this paper: one of Lloyd's market CROs and the other of managing agency directors. The surveys identified a number of common concerns regarding internal model validation across the managing agency community, including:

- Lloyd's feedback is considered a more material driver of the scope of the validation process than the impact on model use, which suggests that greater weight is placed on regulatory oversight than value to the board. *(see Page 6)*
- Cost-effectiveness could be challenged given an estimated market-wide spend of circa £20 million per annum. (*see Page 6*)
- A wide range of education techniques are used to report to the board. However, there exist mismatches between what boards believe they are receiving (in terms of assurance over validation actions) and what those providing the reporting think that they are giving. *(see Page 7)*
- In terms of adding value, there is more perceived value currently in meeting the regulatory requirements than providing assurance to management. *(see Page 8)*
- Less than half of CROs who participated in the survey consider that validation has increased confidence in their internal model. *(see Page 8)*
- Repetition of tests and excessive technical detail are seen to be the biggest areas of waste within the validation process. *(see Page 10)*
- Overlap between validation and other risk and solvency related reporting processes (in particular, the Own Risk and Solvency Assessment) remains a concern when available Risk Management and other suitably independent resources remain limited. *(see Page 11)*

In light of this, our key recommendations for change are the following:

1) Board communication should be clear, concise and proportionate. This will allow for better board engagement, understanding and challenge, leading to better provision of assurance towards use of the model for decision-making.
2) Effective board reporting is unlikely to be achievable using reports destined to meet regulatory requirements. Information is best tailored to specific audience needs, which, where appropriate, could entail the production of separate reports for each purpose.
3) A decrease in the amount of repetitive testing would allow for an increase in the value-added aspects of validation. This should contain the 'wasted effort' perceived by survey respondents. Targeted three-year plans now required by Lloyd's may go some way to alleviating this.
4) Lloyd's oversight of internal model validation would benefit from being more consistent across their reviewing teams, and peer review between the teams could assist this.

3. Diagnostic

A SWOT analysis of current Lloyd's market practices on internal model validation would conclude as follows:

Strengths:	**Weaknesses:**
• Robust and reproducible frameworks for model governance and validation have generally been implemented across the market.	• The market has not yet reached a 'steady state' whereby models are subject to periodic risk-based validation directly linked to rigorous and documented change management. • Boards may not be able to discern the wood for the trees when presented with 'full' technical validation reports.
Opportunities:	**Threats:**
• Validation provides the opportunity for management to gain confidence in their internal model and more robustly use it for decision-making. • 'Use test' work could be focused on the quality of model use rather than the volume or spread of model use. • Experience gained from past validation cycles can be utilised to improve the process going forwards. • Consider likely business impacts at a 1/10-year frequency and rebalance away from purely a 1/200-year solvency consideration.	• The majority of validation reports are not primarily designed to meet the intention of providing assurance to the board regarding their model being fit for purpose. Instead, they are designed to meet Lloyd's guidance, both formal (i.e. written) and informal (i.e. verbal). • Consequently, validation is perceived as a low-value-adding 'tick box' exercise and a necessary evil. • There is potential for over-prescriptive regulation detracting from management or board engagement.

4. Current Practices

In order to understand current validation practices and the market's perception of those practices, the LMA CRO Committee ran a Lloyd's market survey of all CROs during January 2017. The survey was well supported, with 39 responses from CROs. A shorter survey was sent to other senior directors, including CEOs and CFOs, and 59 responses were obtained. In a number of instances, it proved useful to compare and contrast answers on key questions between the two groups.

A number of key learning points from the survey are listed below. They are discussed in more detail in the remainder of this section and in the following two sections.

- Internal model validation is a time-consuming and highly technical process. This consumes a significant portion of Risk Management function resources.
- Materiality to capital and feedback from Lloyd's have the greatest influence over validation planning in terms of determining scope.
- There is significant diversity in how managing agencies report validation findings to boards and whether full validation reports are used.
- The value of validation is currently largely seen in meeting regulatory requirements rather than increasing management's confidence in the use of the model itself.
- Opportunities for removing repetitive testing and reduction in overlap with other Risk & Solvency processes are seen as the greatest opportunities to remove wasted effort.

We asked about the resources that support validation

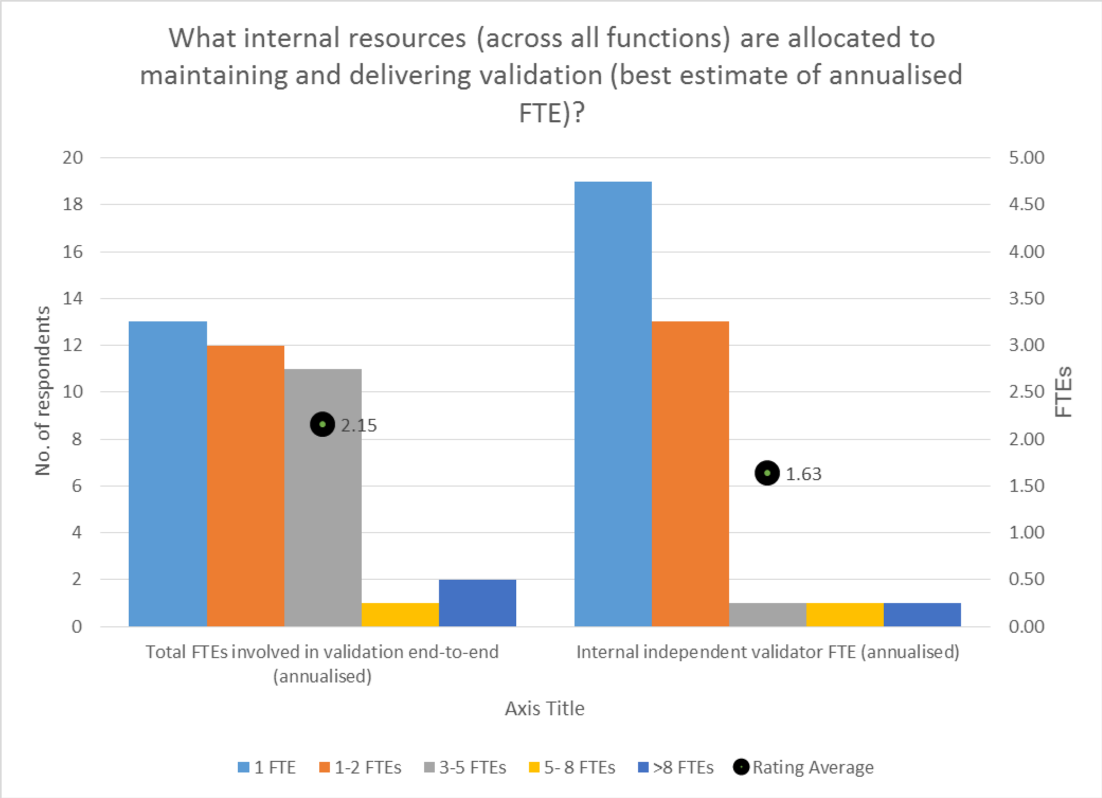

Figure 1 - Resource dedicated to validation

CROs reported that the current resources committed to validation include, on average, 2.2 FTEs involved in validation and 1.6 FTEs specifically on independent internal validation as shown in **Figure 1**. The average annual spend on external consulting or advisory support is £75,000. Across the Lloyd's market as a whole, this might equate to a cost of delivery of circa £20 million. Does this appear to be a proportionate spend given the scale of the 'Model Risk'?

We asked about how validation priorities are set

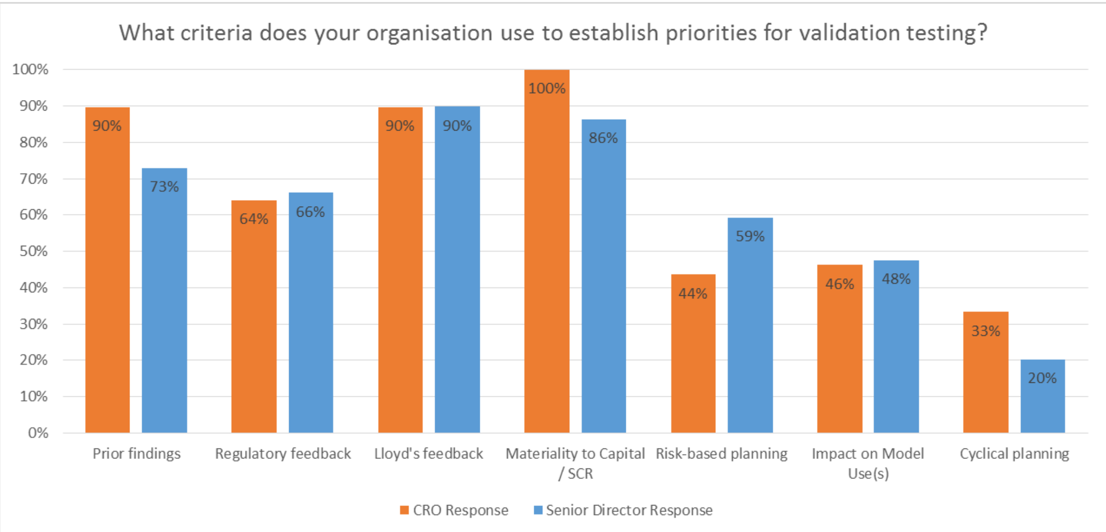

Figure 2 - Criteria for establishing validation testing priorities

The authors consider the three most important reasons to be the materiality to the capital assessment, the impact on model use, and cyclical validation planning, but **Figure 2** shows that Lloyd's feedback and prior findings carry more weight.

CROs surveyed agreed with the first of these, but responded that the second most important driver is Lloyd's feedback, which is perhaps understandable but also disappointing if validation is to add value to boards. There is a significant difference between CROs and directors in terms of the contribution of prior findings and risk-based planning on the overall approach. Perhaps the most surprising findings are that less than half of respondents consider model use when setting validation priorities and that only a third of CROs viewed cyclical planning as a driver of validation priorities. This, however, predates the introduction by Lloyd's of a cycle-based validation programme.

We asked about the current approach to reporting validation findings to boards

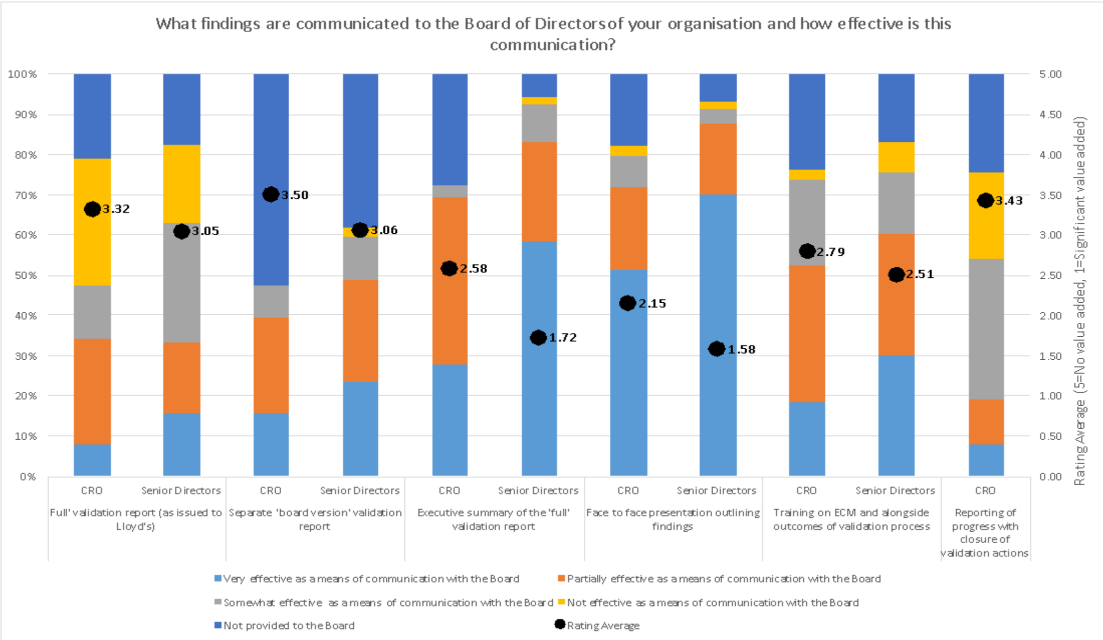

Figure 3 - Means of communicating validation findings to boards

There are clearly issues with each of the methods of communication to the board, which are highlighted by the survey, as shown in **Figure 3**, and associated qualitative responses. It is important to determine the ultimate purpose of the validation exercise and what we want directors to 'Know, Feel and Do' as a result of receiving validation reported information.

Challenges with communication could be related to:

- The communication mechanism – how well designed are board reports on validation to draw the reader to the actionable conclusions? (Is the problem 'wood for the trees'?)
- The ability and willingness of the audience to engage with the material – how well are boards equipped to respond to validation findings? (Is the problem 'validation exhaustion'?)

In this context, if the objective is to inform business decisions and actions, then utilising reports formatted for the regulator to communicate to boards may not be optimal. There are many reasons, including adherence to actuarial standards, such as Technical Actuarial Standard 100 (TAS100) whereby only material information should be provided to each audience.

It is clear there is significant diversity in the market between the use of full reports, executive summaries and board-specific reports, with a number of survey respondents indicating their preference has been heavily influenced by previous Lloyd's feedback. There is, however, reasonably strong evidence to suggest that respondents present validation findings to boards face to face, using an executive summary of the full report to do so, and only a third of respondents make use of the full Lloyd's validation report when reporting validation findings to boards.

On average, a ‘full report’ is 269 pages in length whereas a ‘board-specific’ report is 69 pages in length. The total length of each report is not prescribed, but the board-specific report should be restricted to the key messages.

There is a striking difference of opinion about whether reporting to boards includes reporting against previous actions, with under a fifth of CROs saying that it does, but over three quarters of other directors thinking that it does. This suggests that there might be some miscommunication of actions, progress or a lack of distinction between specific validation actions and model development.

5. ‘V’ for Value

We believe that the real value of validation lies in the assurance provided to enable confident use of the internal capital model to support business decisions. It is therefore instructive to know what business decisions boards and management would ideally wish to have informed by capital models, and whether they believe that validation has actually given them greater confidence in using capital models for these purposes. This should be an iterative process and the validation planning should ensure that this vital element is addressed during the validation process and is fit for its intended purpose(s).

<u>We asked about where validation adds value</u>

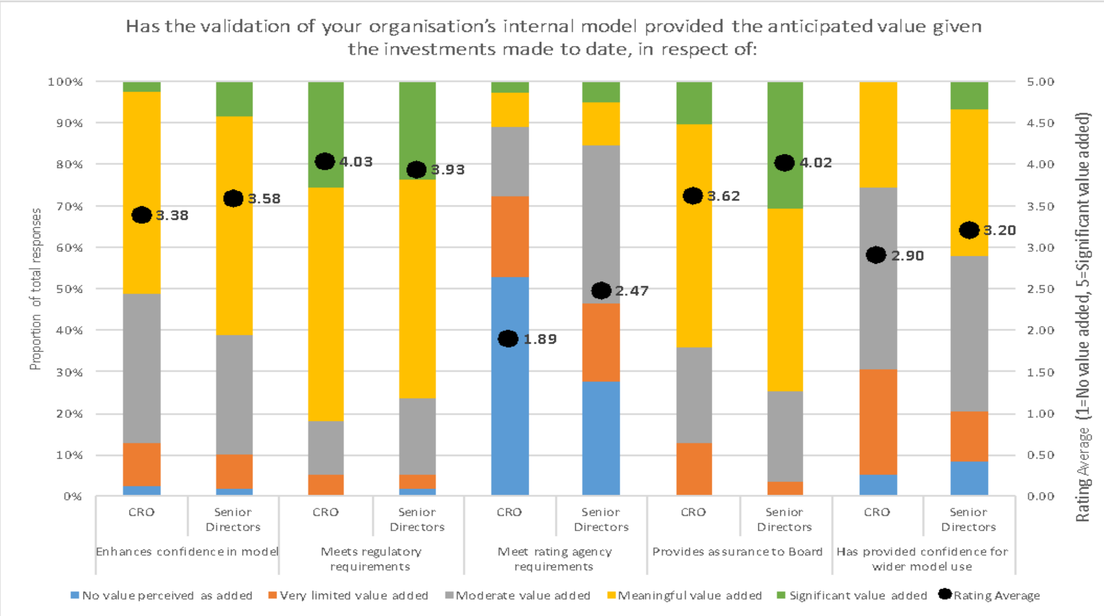

Figure 4 - Value added by validation

The primary value reported by 75% of CROs (81% of other directors) was meeting regulatory requirements, closely followed by 74% of CROs (64% of other directors) reporting it provided assurance to the board – as can be seen from **Figure 4**.

However, perhaps the value gap is best represented by the fact that *<u>only 41% of CROs (25% of other directors) indicated that validation has increased confidence in the use of the model</u>*, which we would view as one of the fundamental purposes of validation. This is a real indictment of model validation as it has been practised at Lloyd’s to date. We need to understand why this is if we are to improve matters in the future.

<u>We asked how, given the investment in capital modelling across the Lloyd’s market, managing agencies would organise themselves to capitalise on internal models in the absence of regulation.</u>

The majority of organisations would still establish an internal model committee to oversee the governance and control of the model and steer model development.

Managing agency boards of directors would still want to see information they could use with confidence as an aid to determining business strategy, business plans and reinsurance decisions.

Missed Opportunities?

The LMA CRO Committee has reflected that we do not often consider what the key question is we are seeking to answer through validation. Perhaps there is a missed opportunity to bring confidence to business planning.

There is an opportunity to assist management in considering the volatility of business plans ‘around the mean’ and the reliability of tools being used, including the internal model in this respect. This would mean bringing more insights and challenges to the model with respect to more frequent outcomes. This might generate insights that are more useful and challenging through the business planning process. In practice, this might, in turn, mean a rebalancing of stress testing of the model away from the 1/200-year solvency scenarios towards more frequently anticipated 1/10-year-type events.

6. ‘W’ for Waste

We understand that, in the absence of guidance from regulators, validation activities might be carried out in a wide range of ways that could make it difficult for Lloyd’s and the PRA to reach equitable, market-wide conclusions over internal models, so some degree of standardisation is inevitable.

However, the principal concerns expressed in the market include the level of wasted effort and inefficiency in the overall internal model governance and assurance processes, in that there is:

- A feeling that boards are being blinded by detailed and technical reports.
- A danger that documentation is produced to satisfy requirements based on unchallenged interpretations of Solvency II principles, which are potentially inappropriate and disproportionate to the nature of the business.
- A risk that, as a result, boards are unable to see the ‘wood for the trees’ and a culture is created where the box is ticked but reports are not properly read or acted upon.
- A further risk that validation teams are distracted by the need to produce repetitive tests and potentially miss the added value insights that could make their findings more relevant.

If boards are expected to be accountable for the oversight of internal models and ensuring their compliance with Solvency II requirements, they should be empowered to be able to drill-down to the key strengths and weaknesses of models and require targeted remedial action to address material weaknesses. That is, after all, the overall intent of the process.

We asked about perceived areas of waste in the validation process

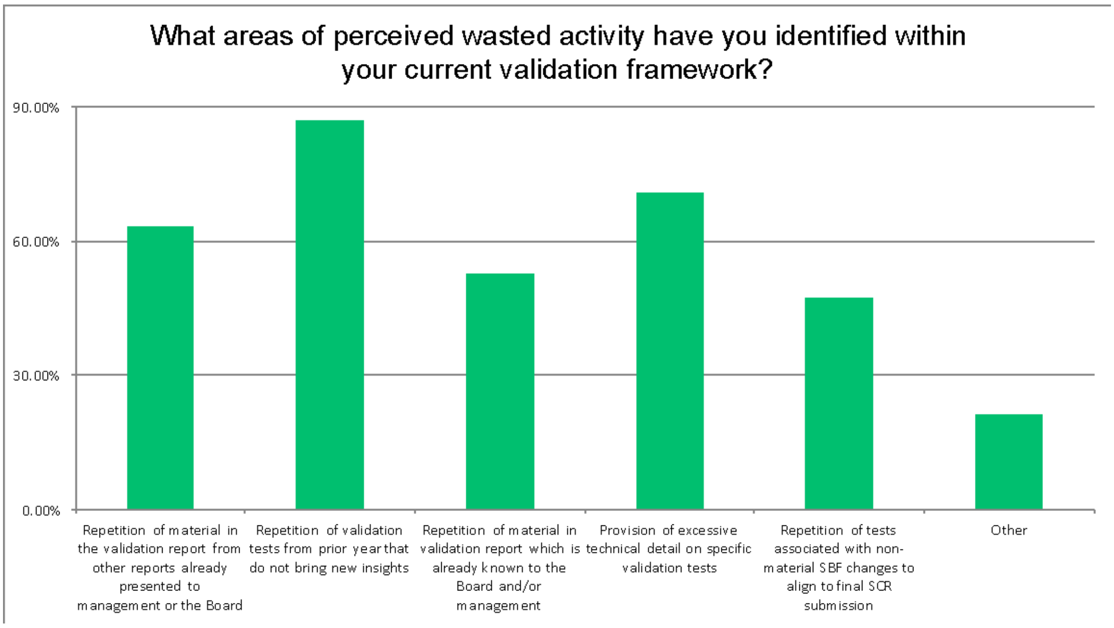

Figure 5 – CRO perception of wasted activities

A number of perceived wasted activities were identified, as outlined in **Figure 5**, with 87% of CROs indicating that repetition of prior year tests was their most common issue, followed by 71% of CROs reporting pressure to provide excessive technical details on specific validation tests. Several respondents reported on 'completing tests prescribed by Lloyd's in each validation cycle that do not add any value or insight'.

Specific feedback included the 'opportunity cost of time spent on these detracts from time spent on potentially more value-adding work'.

The expectation that major model changes which occur during the year will be subject to a separate validation exercise might, as a corollary, provide an opportunity to reduce the scope of the annual validation work.

There is a potential that some of this may be mitigated by the Lloyd's requirement of a three-year cycle and, from that, better and more focused planning. However, a significant portion of testing will continue to be required annually as it appears to be considered to be material by Lloyd's or the regulator, when the board and management may have a differing view of its priority. This could well be the case for underwriting risk, where annual changes in the business plan could lead to an expectation of ongoing deep dive activity, year-on-year.

There is a general sense in the market that the regulatory messages from the top are largely sound. Nonetheless, talking sensibly about validation being a cyclical, risk-based and proportionate process that should lead to confidence in using internal models. This is not how the messages are interpreted by those at the regulatory coalface, who seem to take a 'do it all, all of the time and at the same time each year' approach to validation.

There is an opportunity, perhaps, to step back and focus on change. What has changed in the internal model and what has changed in the organisation's business plan and business model since the last validation exercise and, as a result, what does this mean for the prioritisation of activity?

<u>We asked about areas of overlap with validation</u>

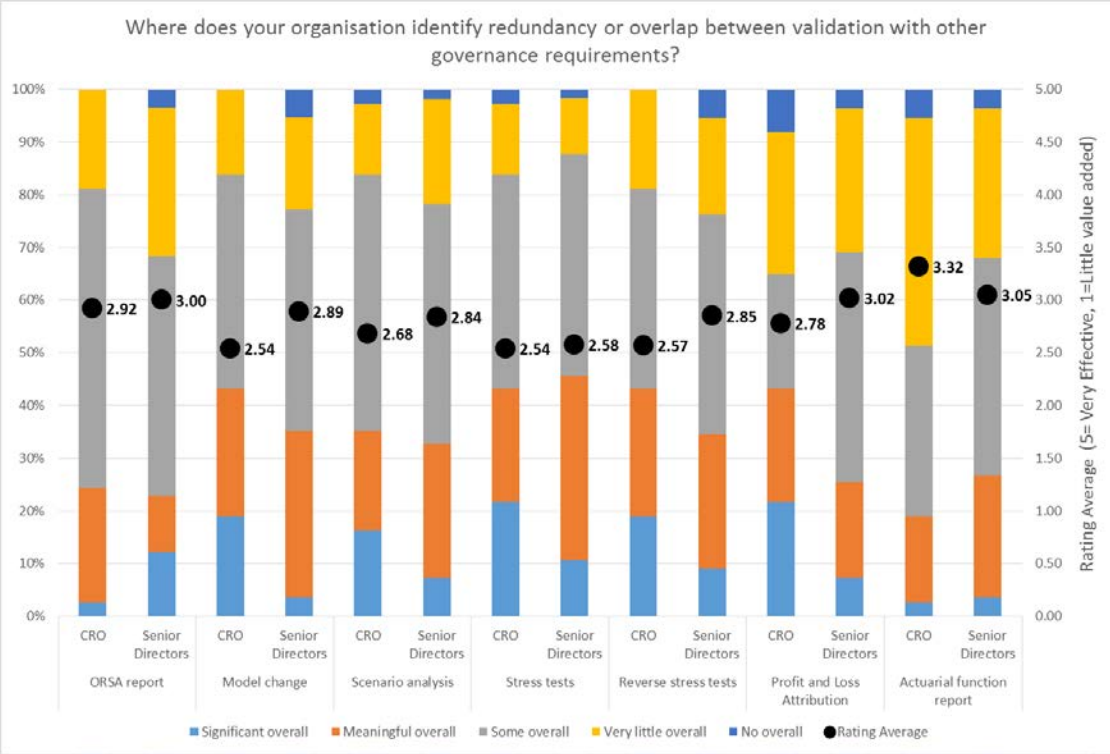

Figure 6 – Redundancy or overlap of validation with other processes

The survey identified a number of areas of significant or meaningful redundancy or overlap in current approaches, as outlined in **Figure 6**, including model change, stress testing and reverse stress testing, which were all noted by both CRO and director respondents as significant or meaningful overlap.

Validation sits within the context of a wider Enterprise Risk Management framework and internal model governance process. Every opportunity should be used to leverage work already carried out and presented to the board (and its committees). For example, validation should be able to cross-reference work completed through the ORSA process and associated activities such as stress and scenario testing and reverse stress tests. There is little value in repetition or re-presentation of materials already put before the board.

The specific feedback suggested that ‘the overlap is not so much between the activities themselves as between the reporting of those activities, given how prescriptive Lloyd’s is about the contents of the formal reports for the various activities.’

7. Conclusions

The key messages and next steps from this report for consideration by Lloyd’s, regulators and managing agencies are that internal model validation should ultimately:

1) <u>Be focused on outcomes rather than the process</u>

Validation is important because of the outcomes it provides in terms of assurance over the appropriateness and use of internal models. This assurance can be achieved in a number of ways, whilst maintaining Solvency II compliance. Managing agencies would benefit from the maximum flexibility in delivering this assurance, allowing them to communicate internally in the most effective manner and design a process that is appropriate and proportionate to their business.

2) <u>Be risk-based and proportionate to the exposure to model risk</u>

Validation is there to provide assurance that model risk (the risk of materially mis-stating risk exposures) is managed within appropriate limits. Validation should, therefore, be risk-based and proportionate, wherever possible, allowing managing agencies to adopt a cycle of validation appropriate to their own risk profile.

3) Differentiate effective board governance and oversight from reporting

Validation must meet the needs of several distinct audiences including boards and senior management as well as Lloyd's and the regulators. The board should be able to discharge its governance and oversight accountabilities through a range of means, including committees, and receive validation outcomes in the format best suited to its way of working, independently of regulatory reporting requirements.

8. Recommendations

As part of the survey, the CRO Committee included a question on a proposed example validation framework, in order to gauge consistency in the market and assist in recommending a starting position that managing agencies can adapt to fit their own risk profile. The example presented within the survey is illustrated by the diagram and table below.

The survey suggests 71% of CRO respondents found the proposed validation framework, illustrated by the diagram below, helpful in articulating best practice, and a further 16% thought it could be helpful with minor adaptions.

This suggests that an overall best practice framework would be useful to the majority of managing agencies.

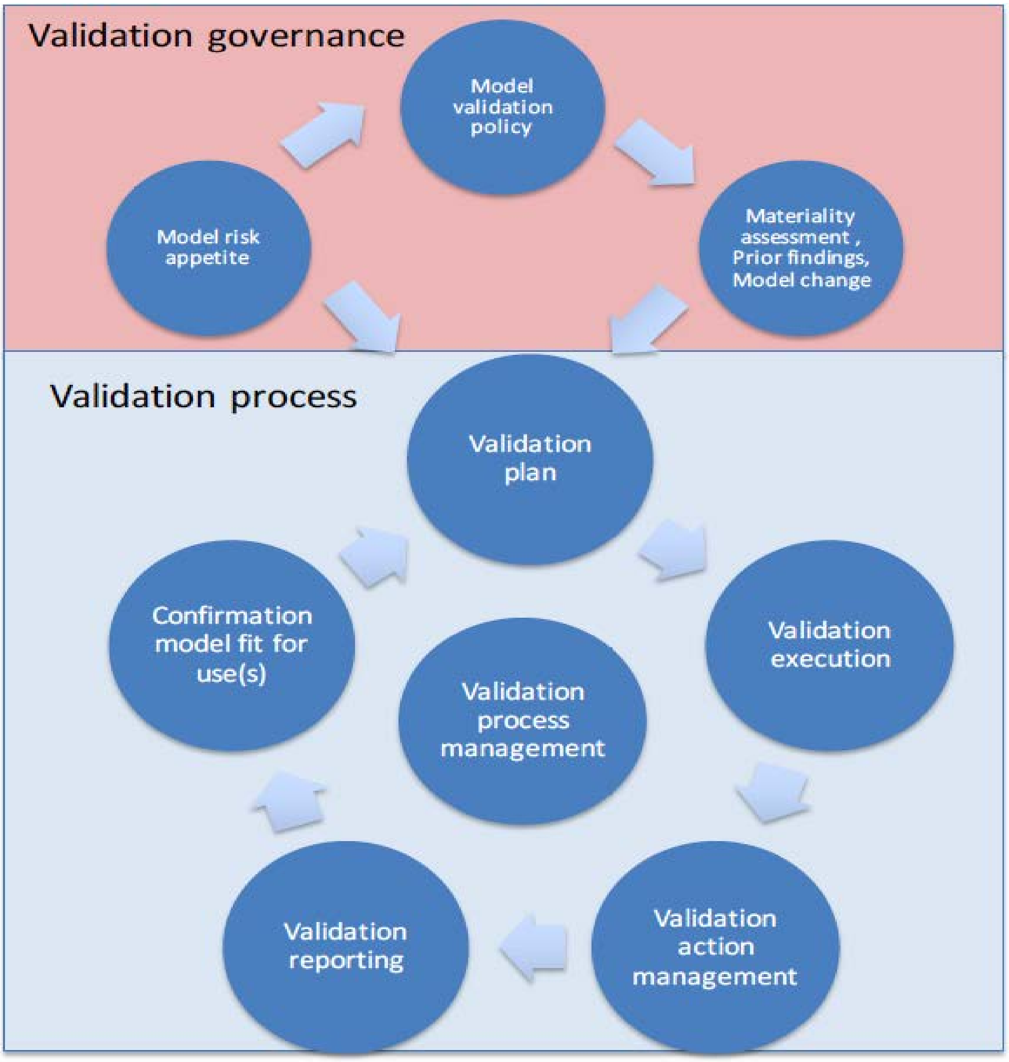

Figure 7 – Proposed validation framework

Step	Description
Model validation policy	Overall governing document outlining approach to validation
Model risk appetite	A clear statement of the level of acceptable model risk (including parameters)
Materiality assessment	An evaluation of the importance of different aspects of the model to determine priorities for activity
Validation plan	An exercise to determine the scope and purpose of all validation activity (tests set to help answer the current validation questions, not simply rolled forward from year-to-year)
Validation execution	A process whereby validation work is delivered to the agreed plan and timetable
Validation action management	A process for agreeing actions and due dates with responsible managers and then tracking completion of actions
Validation reporting	The production, review and approval of a formal report
Confirmation model fit for use(s)	An attestation providing assurance the model is fit for the intended use(s)
Validation process management	A process for managing and controlling deviations from initial validation plans through the execution phase

Where does validation fit into a value-adding business process?

It is our opinion that the main value created by the validation process is the assurance provided to the board that the tools they are using to make decisions are appropriate and fit for purpose. To that end, a clear understanding of what it is appropriate to present and communicate to the board for management purposes as opposed to regulatory sign-off would be extremely valuable.

We believe that there should be a short summary report for the board to set out the things the board needs to know, which could be but need not be the executive summary from a fuller report that meets the needs of regulators. The regulatory report may be supported by detailed technical appendices and working papers, which could be made available on request. This is illustrated in the diagram overleaf.

If that is what validation should be, then we should consider the following changes:

1. **Lloyd's oversight could benefit from being more consistent and peer-reviewed**

   Managing agencies would benefit considerably from more consistent provision of guidance and oversight by Lloyd's to ensure that, where internal processes need to be improved or adapted, the guidance to agencies is as consistent and proportionate as possible.

2. **The effectiveness of communications to the board should be reviewed to ensure that messages are being understood**

   In order to gain value from the validation testing, it is important that the board understands the messages that are being communicated. This may mean revised, clearer reporting with content and manner appropriate and proportionate to the business, more concise exhibits, or a gap in knowledge at board level. This could include specific training provided by the validation team to inform the board as to how validation reporting is structured. Improvements should allow for better board understanding and challenge, leading to better provision of assurance towards use of the model for decision-making.

3. **Information should be tailored to specific audience needs**

In many cases, this will imply that boards will receive complementary but different reports on validation to those submitted to Lloyd's or regulatory bodies. **Figure 8** provides a conceptual outline of a reporting hierarchy able to meet the needs of varying stakeholders.

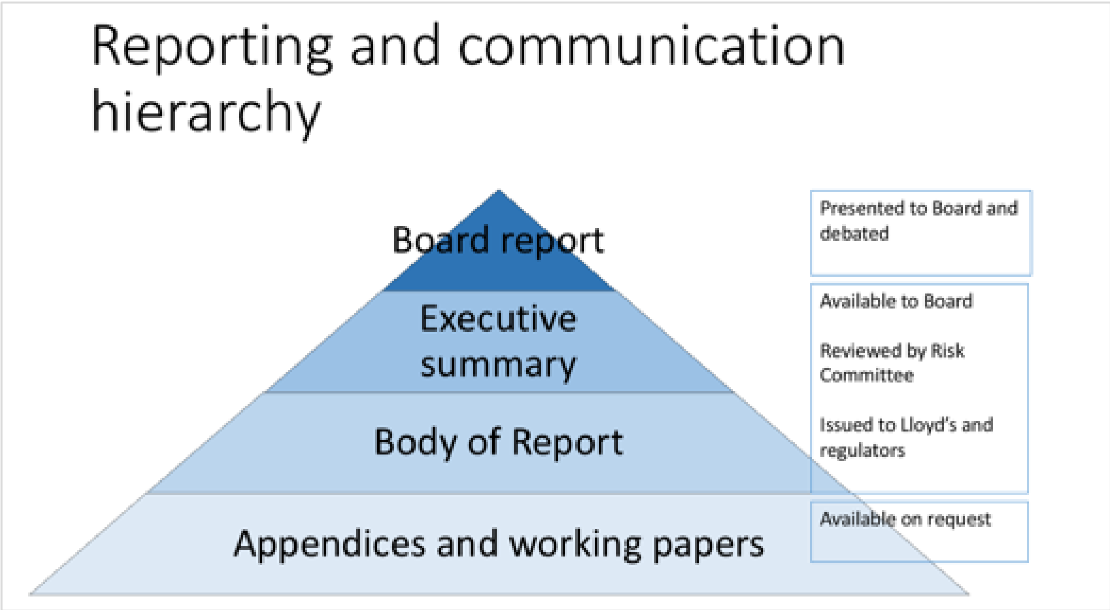

Figure 8 - Reporting and communication hierarchy

4. **In order to increase the value of validation, there should be a decrease in perceived wasted resources expended on potentially excessive or repetitive testing**

A decrease in perceived 'Waste', including repetitive testing and regulatory driven requirements, should lead to an increase in the perceived value of the exercise through the better ability of the exercise to provide assurance around the model.

9. Acknowledgements

The report was written by a working party set up on behalf of the LMA CRO Committee comprising:

- Alex Hindson - Argo
- Rebecca Jones - Ark
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- Susan Young – R&Q
- John Coe - TMK