KPMG

Validating your way to regulatory compliance and better decisions

A comprehensive view of the interdependency of data and models

Validating your way to regulatory compliance and better decisions

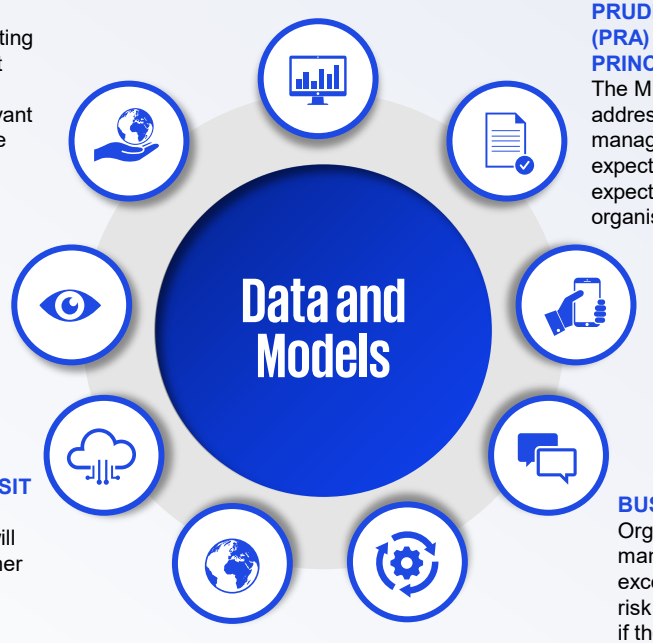
A comprehensive view of the interdependency of data and models

Financial institutions rely on models for critical day-to-day activities (e.g. pricing, customer facing tools, financial and regulatory reporting, financial crime, and risk management). The global financial crisis and industry wide remediation activities revealed the fragmented and unreliable nature of controls and governance frameworks associated with these models. Regulators have increased scrutiny, leading to financial institutions implementing more robust model risk management frameworks, however, our view is that model risk management and data management activities are still not well integrated, which can lead to significant risks for organisations.

Model risk management frameworks need to be supported by appropriate enterprise data management activities that include having an appropriately sized data governance function, ongoing data quality monitoring, and documenting and maintaining an end-to-end view of data flows (lineage) and the corresponding business processes and controls. Additionally, high-risk calculators that may not meet model criteria need to be identified and included in the validation process.

There are a number of drivers for taking a holistic data and model risk management approach, such as the rapid adoption of machine learning models. This further highlights the need for a stronger connection between data management and model risk management practices to ensure these models are producing accurate results, while avoiding biases and other ethical issues.

Environmental Drivers for Enhancing Model and Data Management



CONSUMER DATA RIGHT (CDR)

To prepare for a NZ CDR, organisations will need to ensure their customer data is accurate, complete, accessible, and not duplicated.

CLIMATE RELATED DISCLOSURES

There is a requirement for Climate Reporting entities to collect relevant data and report accurately on greenhouse gas emissions across organisations' value chains. Relevant climate risks and opportunities need to be factored into the decision making of all organisations.

PRUDENTIAL REGULATORY AUTHORITIES (PRA) MODEL RISK MANAGEMENT PRINCIPLES

The MRM Principles set expectations to help address the shortfalls of how models are managed. While this is a UK policy, these expectations will potentially drive regulator expectations for NZ Financial Service organisations in time.

AI MODELS AND ETHICS

With the rapid rise of artificial intelligence models, there is a need to ensure these models are accurate and not subject to bias.

TECHNOLOGY TRANSFORMATION

Any move to new technology platforms requires good data management practices in place to ensure data feeding models remain accurate and complete.

DEBT-TO-INCOME (DTI) AND DEPOSIT TAKERS ACT (DTA)

Future regulations like DTI and DTA will require accurate and complete customer data in order to comply.

BUSINESS BENEFITS

Organisations need to make use of well managed data to inform decision making, exceed customer expectations, manage risk and reduce operational inefficiencies if they wish to remain competitive.

EUROPEAN CENTRAL BANK'S FOCUS ON BCBS239

The European banking regulator's focus on BCBS239 (Principles for effective risk data aggregation and risk reporting) will likely flow through to Australia and NZ banks in the future, requiring an uplift in model and data management.

CCCFA

Regulatory requirements for CCCFA require accurate and complete data and models in order to ensure compliance.

Regulators have increased scrutiny, leading to financial institutions implementing more robust model risk management frameworks.

However, challenges still exist that need addressing.

Common Challenges

TECHNOLOGY

Legacy systems can lead to data being stored in multiple systems, leading to inconsistencies that can compromise the accuracy and reliability of model outputs.

Emerging technologies like AI present challenges due to their complexity and lack of historical data available to determine whether the model is accurate or not.

Often, there is only a high level understanding of how everything fits together across technology, data, and business functions.

COMPLEXITY

As organisations collect more data from different technology platforms, it can become difficult to ensure that the data and models built on that data are accurate and reliable. Particularly as documenting these model processes can be very challenging.

Validating models requires a specific set of skills, such as expertise in statistics, data analysis, and an understanding of business functions and regulatory obligations. This can be hard to find, particularly in a small market like New Zealand.

MODELS NOT DESIGNED TO MEET OBLIGATIONS

The technical aspects of designing models that comply with regulatory reporting requirements require expertise in both compliance and data analysis.

However, it's equally important to ensure that the model is designed to meet basic business needs, such as producing accurate loan output tables. Neglecting these basic requirements can undermine the effectiveness of the model resulting in poor customer outcomes that require remediation.

IDENTIFYING MODELS (AND CALCULATORS)

Models can serve a variety of purposes and can take many different forms from those embedded within systems to simple Excel spreadsheets.

However, there is a risk of confusion between models and calculators, or of overlooking calculators from a risk management perspective. This can lead to a lack of validation or other necessary controls. It's important to ensure that all models, including calculators, are subject to appropriate validation and control processes to ensure their accuracy and reliability.

THE EXPANDING DEFINITION OF MODELS

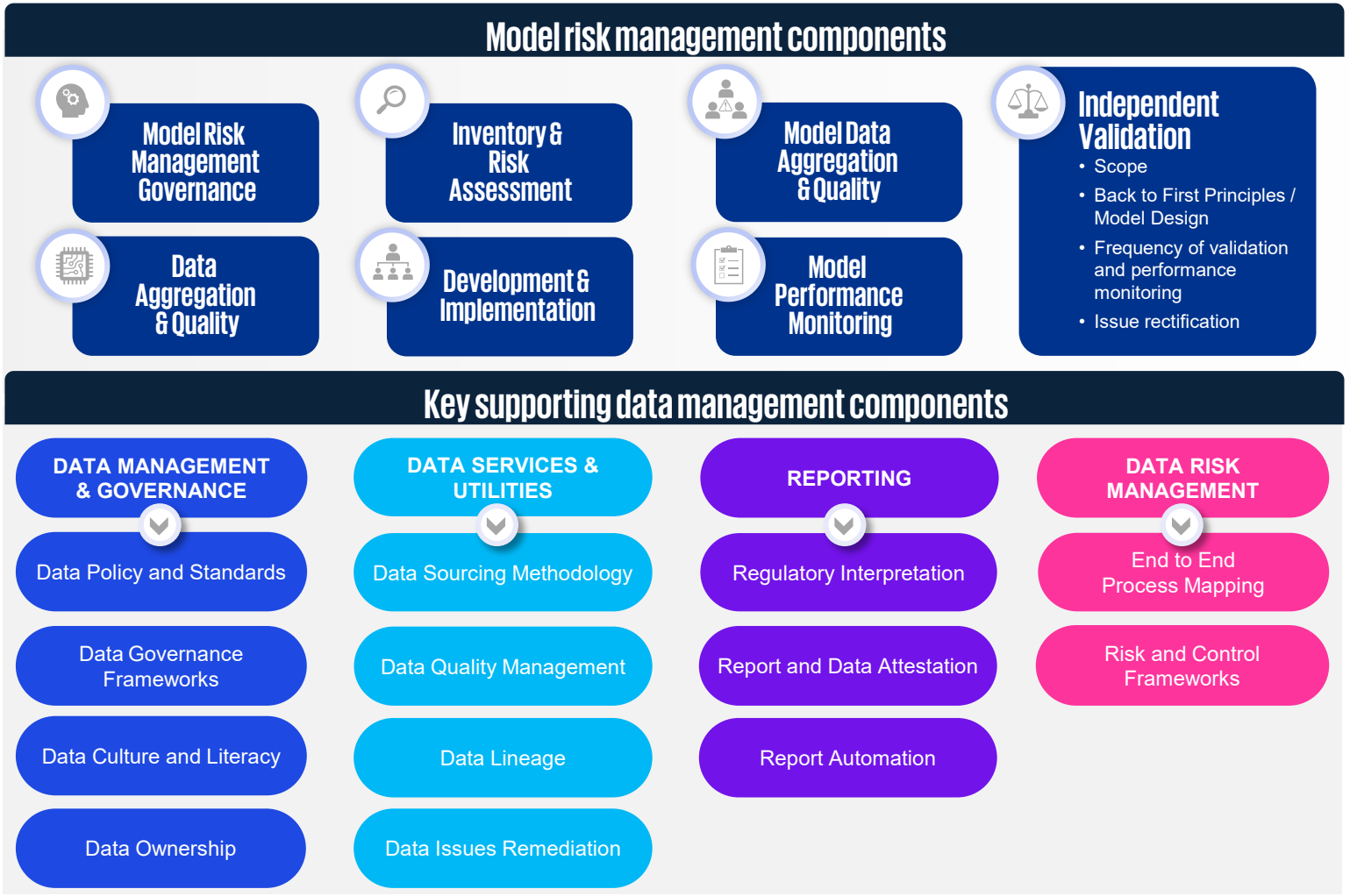
Globally, there is a shift towards using more sophisticated models and complex rules/algorithms in critical day-to-day activities within a bank. Consequently, some regulators like the Prudential Regulation Authority (PRA) in the UK are broadening the definition of a model to consider other types of tools which are material to business decisions to ensure appropriate governance applies.

A "**model**" is a quantitative method, system, or approach that applies statistical, economic, financial, or mathematical theories, techniques, and assumptions to process input data into output. The definition of a model includes input data that are quantitative and/or qualitative in nature or expert judgement-based, and output that are quantitative or qualitative.

In addition, where material deterministic quantitative methods such as decision-based rules or algorithms that are not classified as a model (often classified as "**calculators", "tools" or "system logic**") have a material bearing on business decisions and are complex in nature, organisations should consider whether to apply the relevant aspects of its Model Risk Management framework to these methods.

Source: SS1/23 – Model risk management principles for banks by Prudential Regulation Authority (PRA)

Model Risk & Data Management Components



Model risk management must be supported by strong data management practices

Model risk refers to the negative outcomes arising from errors in models or improper use of model outputs, leading to outcomes, such as financial losses, harm to reputation, and restrictions on business activities.

Regulators are increasingly focusing on model risk management, with guidance emphasising the need for a robust governance framework, clear documentation, and ongoing monitoring.

Effective data management and data risk management are also essential for maintaining the integrity of financial models and protecting the financial well-being of banks and their customers.

Independent validation is crucial for ensuring the reliability and accuracy of models, but must extend beyond the traditional model risk management boundaries to include key data management components.

Contact Us

Rajesh Megchiani

Partner
Consulting
rmegchiani@kpmg.co.nz

Dhayaparan Raman

Associate Director
Consulting
draman@kpmg.co.nz

Greg Scott

Director
Consulting
gregscott@kpmg.co.nz

kpmg.com/nz