Model Management Brief: What to Include in Your Model Risk Management Presentation to Your Board of Directors

In this brief we provide advice on what to include in a model risk presentation to a company's board of directors. We assume the board is already familiar with your model risk management program (policies, governance, risk appetite metrics, etc.) and focus on the most pertinent information for periodic board updates. Although our examples are from the financial services sector, these suggestions apply equally well to other companies with Model Risk Management or Responsible AI programs.

1. **Overview of Model Inventory**-

   The presentation should begin with the number of models used within the company and how they are used, as described below. It's also important to show how the volume of models has trended over time. Charts showing the quarterly count of total models in production over the last few years are most informative. Either increases or decreases in models in use can raise important questions about whether models are used optimally for decision-making, and resource needs to support development, validation, and governance. We recommend tables or charts depicting the number of models by the following categorizations:

   a. **Model Use**- Break down the model inventory into categories of models used for common purposes such as credit loss forecasting, HR models (e.g. resume review and hiring), fraud identification, asset management, valuation models, market risk measurement, and so forth. Categories that are trending up or down should be further examined and explained. For example:
      i. If the count of fraud models is increasing, is this because fraud has ramped up and more models are being adopted to combat it? How are the new models expected to be able to address the heightened fraud risk?
      ii. Is an increase in the number of credit models due to the introduction of new lending products that need new tools to assist in underwriting and account management decisions or is there some other reason?
      iii. Are models being used for a particular purpose for the first time such as for matching resumes to job openings or assessing candidates? New uses of models to make decisions that have not previously been made with the aid of models should be highlighted along with an explanation of how their risks (e.g. fairness, regulatory compliance, etc.) will be managed.
      iv. Evaluate and report on the performance and risk ratings of important **model suites or systems of models** that are used together for a common purpose.

Evaluate how models in these suites are used in combination to inform important decisions and support significant processes, and the aggregate model risk and uncertainty the suite imposes on the decisions or processes they support. Important model suites may include those used for forecasting the needed amount of loan loss reserves, capital stress testing, underwriting (including credit and fraud assessment and income verification), post-origination fraud identification, BSA/AML monitoring, liquidity and market risk measurement, financial reporting and others. Assessment of the **joint model risk of model systems** has been an increasing focus of bank regulators in recent years, and should be a focus of bank management and the board as well.

b. **Business or functional area**- It is important for the board to see an enumeration of the models used by individual businesses and functional areas such as commercial lending, HR, asset management, retail lending, Balance Sheet Management, Trading, Finance, and so forth. Multiple questions can flow from these views on model trends and performance by business. For example:
   i. Are there businesses with low model counts that might benefit from expanded model use?
   ii. Reporting of Risk Appetite Metrics (see section 3 below) by business is a straightforward way to examine model risk posture by business and allows the board to make informed inquiries regarding model risk, model remediation priorities, and line of business (LOB) model strategies.
   iii. Given that first line modeling resources are often aligned by line of business or functional area, LOB model risk assessments can shed light on businesses with modeling practices in need of enhancement, or those too low on resources to undertake necessary model improvements.

   In addition to the board seeing this view, it's important for business heads to see and understand the model risk profile for their specific line of business, incenting them to engage in model governance and risk remediation activities.

c. **Model Risk Tier –** At most companies with model risk or responsible AI programs, each model will be assigned a risk tier indicating their perceived level of inherent risk. Typically, the number and type of controls applied to each model depends on the model tier. For example, high tier models typically require more thorough testing, documentation, validation, and more frequent monitoring. The tier is assigned when models are first brought into the model inventory so controls can be varied by model tier from the beginning of a model's lifecycle (e.g. to ensure proper testing and documentation standards are applied according to tier).

   The tier is usually based on factors such as the significance of the model use on the firm's decisions or effect on its customers, and the degree of model complexity, uncertainly, and level of transparency. The level of regulatory scrutiny may also factor in. The number of tiers typically range from three to five depending on the institution's desire to distinguish their risk management practices by risk level.

In addition to presenting the tier distribution for the entire bank, it's useful to report on it separately for other categories discusses in this paper, such as business unit. A business unit with a high concentration of Tier 1 (high-risk) models may face greater exposure to financial (credit or market), operational, regulatory, or reputational risk.

d. **Model Validation Rating**- As a part of independent model review, it's typical for validators to assign a model rating to indicate the level of residual risk after considering the model's limitations and risks, and to reflect any identified findings or issues to be remediated. These may include deficiencies in documentation, model inaccuracies, or questionable methodological practices and assumptions.

   These ratings can vary by firm, with some assigning simply a pass/fail rating, or perhaps a three-part rating system such as "approved", "approved with findings" or "not approved". An increase in the percent of models with adverse ratings signifies an increase in aggregate model risk, and deserves explanation.

   Tracking changes in validation ratings over time can help detect **systemic issues** in model development practices, especially if certain business areas or model types are consistently flagged.

   Keep in mind that not all adverse ratings carry equal risk. It's important to assess whether models with validation concerns are also high tier models, or are used in regulatory filings or customer decisioning. Consider reporting the percentage of Tier 1 or high-materiality models that are not assigned the highest validation rating, or even including this among your Risk Appetite Metrics.

e. **Internally Built versus Third Party Models** – It is useful to categorize models into those built by third parties (which can often lack transparency in methodology, assumptions, and underlying data) versus internally built models, as their associated risks may differ significantly.

   Third-party models often present unique challenges:

- **Limited transparency**, making validation and monitoring more difficult.
- **Dependency on vendor-provided updates or support.**
- **Restrictions on access to source code or data**, which may limit effective challenge and validation.
- **Potential misalignment with the bank's specific risk profile or business context.**

For these reasons, third-party models may require additional governance controls, including contract-based performance standards, more frequent performance monitoring, and periodic vendor risk assessments.

Reporting to the board on the **percentage of third-party vs. internal models**, along with any material issues affecting third-party model risk, can help ensure proper risk oversight.

See our **February 2025 Model Management Brief "Third Party Model Management"** for a discussion of key practices in this area.

f. **Customer impacting models-** Each model in a firm's inventory should indicate if its use can have a direct impact on customers. Customer impacting models for financial institutions include models used to market to potential customers and approve lending decisions, monitor and approve account transactions, manage problem loans, and so forth. Not only do flawed models create an adverse customer experience, but as models typically need to comply with regulations and laws, serious flaws in customer impacting models can expose the firm to regulatory or legal action. It's important for your board to have insight into the number and

2. **Issues and Findings**
   a. Issues (aka "findings") are formal observations requiring remediation and may be raised by independent model validators, internal auditors, or by regulatory bodies. These issues may relate to deficiencies in model documentation, data quality, methodological assumptions, performance, or broader governance practices.
   b. It's important to monitor not only how the number of issues is trending over time, but in addition, you should always present a view dividing the number of issues by the number of models. Looking only at the raw number of issues can be misleading, especially in growing inventories. A more informative view is the **issue rate per model**, which helps isolate whether model quality or control discipline is improving or deteriorating over time. Also, as issues typically are assigned with a level (1,2,3, or High/Low for example), it's important to report on issue trends by level to give the audience a sense of the importance of the issue trends.
   c. Further segmentation is helpful to identify root causes and recurring themes. Reports should show the **distribution of issues by type**—such as flawed assumptions, documentation gaps, performance concerns, and so forth—and ideally by issue **severity level** as well. Further segmentation is useful here to identify patterns and prioritize remediation efforts.

3. **Model Risk Appetite and Metrics**
   A key part of model risk oversight is evaluating whether the bank is operating within its established model risk appetite. This is typically assessed by comparing policy-defined model risk metric values to predefined thresholds.

Most banks use a traffic-light system (green/yellow/red) and track between six and ten key model risk metrics. Common examples include:

- Number of models past due for validation or never validated
- Total issue/finding counts, especially high-severity issues
- Percentage of models with adverse validation ratings
- Tier distribution and the share of high-risk models
- The percent of issues that are past due or the percent that are repeat issues

Model risk posture can be determined through expert judgment or a predefined rule set. For example, a firm may define that breaching multiple red thresholds means the firm is operating outside of risk appetite. A combination of both approaches is often used to make the final determination.

4. Emerging Risks and Strategic Considerations

The board should be informed of any emerging model risks or strategic initiatives that may materially affect the institution’s model risk profile. This includes:

a. Significant Changes to the Model Risk Program-Any major initiatives to enhance or restructure the model risk management framework should be reported. Examples include:

- Incorporating a new class of models into the inventory (e.g., machine learning, vendor AI, ESG models)
- Transitioning to new regulatory or accounting requirements
- Adopting model lifecycle or governance technology platforms

These initiatives often demand extensive cross-functional effort and may signal rising complexity or exposure.

b. Changes in Model Use or Scope-Significant shifts in how models are used—such as deploying models in new customer-facing processes or expanding reliance on third-party models—should also be reported. The board should understand the nature and magnitude of the change, including any new risk management measures being adopted.

While not part of routine reporting, **board education** may occasionally be needed when emerging technologies (e.g., Generative AI) or regulatory expectations introduce novel risks that impact oversight responsibilities. In such cases, targeted briefings should be provided outside the regular reporting cycle.

Summary

Routine reporting to the board on model risk should go beyond inventory counts and provide meaningful insights into emerging risks, model suite performance, tier distributions, validation outcomes, and overall risk posture relative to appetite.

Clear, risk-based reporting supports informed oversight and reinforces the institution's commitment to sound model governance. ***Model Management Advisors*** can assist institutions in designing and enhancing board reporting frameworks that are insightful, actionable, and aligned with regulatory expectations.