



Avoiding the Everyday Obstacles of Model Validation

Opaque models, poor allocation of resources, and formulaic validations

Increased requirements by regulators to establish comprehensive Model Risk Management (MRM) frameworks and scarce financial resources of institutions have led MRM functions to improve their efficiency through greater standardisation and streamlining of model validations. However, this drive for efficiency may have the unintended side-effect of threatening the effectiveness of an institution's MRM function.

Obstacle	Description	Countermeasures
Opaque Models	<ul style="list-style-type: none">• Increased Validation Complexity: Increased opacity and decreasing explainability of model outputs makes model validations significantly harder.• Three of the most common causes of increased model opacity are:<ol style="list-style-type: none">1. Increased use of opaque modelling techniques (e.g. AI/machine learning)2. More common use of vendor models3. Greater interconnectedness of models	<ul style="list-style-type: none">• Explanatory Tools: Additional tooling is often needed to provide explanations for results from opaque models. The responsibility of creating these tools should lie with the model developers to incentivise the selection of less opaque models.• Vendor Model Guidelines: Development guidelines should cover the selection and onboarding of vendor models. They should include minimum standards for documentation and validation support as part of service line agreements.• Overarching Model Tests: Model validators should take a comprehensive approach when validating interconnected models (e.g. perform sensitivity or stress testing analysis along the whole chain of models and not only on the model itself).
Resource Allocation	<ul style="list-style-type: none">• Focusing on Regulations Only: In cases of limited resources, validation work tends to focus on the minimum regulatory requirements, independent of the materiality of the model risks involved.• Time Concentrated Workloads: Validation tasks are typically not evenly distributed throughout the year which leads to spikes in the validation team's workload. This is exacerbated by minimal sharing of documentation, data, and test results until the initiation of the validation.	<ul style="list-style-type: none">• Risk-based Validation Schedule: Institutions should use a risk-based approach for model validation (i.e. determine intensity and frequency of model validation based on model tiering) to use existing validation resources optimally.• Shared Validation Schedule: Model validation teams should manage a shared calendar for validations that takes into account expected major upcoming activities, with a separate list of minor tasks to be performed during quiet periods.• Early Access: Validators should have access to drafts of both technical and testing documentation to reduce the ramp-up time of the validation.
Rise of the Robovalidator	<ul style="list-style-type: none">• Standardised Validations: For efficiency and standardisation a validation may be strictly defined with a set number of tests and no update over time. These validations are unable to respond to any changes in the model environment.• Focusing on the Automatable: To make future validations more efficient, validators are incentivized to focus on superficial tests that can be automated easily. Relying on these low-hanging tests reduces the effectiveness of the validation and can provide a false sense of security.	<ul style="list-style-type: none">• Freedom to Validate: Validators should be given sufficient freedom to adapt their analysis methods to respond to changes such as the environment and model use.• Automation After Exploration: Although automation can make validations more efficient, the initial setup greatly increases the workload. Automation should only be applied after time when the value of each test has been determined.• External Insights: Using external validators can provide new insights and techniques which can be adopted by internal validation teams.

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Model development process and balanced segregation of duties

Sequential model development processes with poor stakeholder engagement and disproportionate segregation of responsibilities are evergreen issues for MRM functions. Both lead to slower or less effective model validations. However, there are techniques and approaches that can be used to parallelise work between developers and validators and maintain a balance of segregation.

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Non-agile Model Approval Process	<ul style="list-style-type: none"> • Late Stage Engagement and Approval: The validation and approval of the model happens at a late stage and as a single step which significantly increases the risk of: <ol style="list-style-type: none"> 1. High sunk costs if a model is rejected during the initial validation 2. User-hostile models if model users cannot articulate their preferences early enough in the model development process • Sequential Handovers: The typical model development and approval process in a bank consists of subsequential steps with fixed deadlines and handover points. 	<ul style="list-style-type: none"> • Stakeholder-Approved Model Scoping: The development of larger models should be broken down into multiple modules during model scoping, and the approach should be approved by all stakeholders. The model scoping document should include regular module-level checkpoints for user acceptance testing to keep stakeholders engaged throughout development. • Modularised Validations: Once the core module of a model has been developed, it can be assessed by validators while developers simultaneously continue with supplementary modules. Additional development work can then be validated separately without performing a full revalidation of the model.
Problematic Segregation of Duties	<ul style="list-style-type: none"> • Minimal Segregation: Most institutions have policies to segregate duties between developers and validators. However, in practice, some validators (mainly in smaller institutions) depend heavily on the model developers, inhibiting their effectiveness at challenging models during validations. • Extreme Segregation: On the other hand (especially in larger institutions) validators can be too strongly segregated from model developers, leading to reduced channels of communication. This may cause validators to take a combative approach by raising action items on all issues, regardless of their practical impact, and creating an administrative burden. 	<ul style="list-style-type: none"> • Rules of Engagement: Institutions should set up clear guidelines for the engagement of their model validators. The guidelines should lay out expectations on model validators' behaviour and include formal and unambiguous rules (e.g. that model validators are not allowed to participate in developer meetings or that model outputs may only be produced by model developers). • Practical and Proportionate Expectations: The rules contained in the guidelines must be realizable and proportionate to the size of the institution and its risk-controlling staff.

How we can help.

- ✓ Validation of internal and vendor models
- ✓ Benchmarking against peers
- ✓ Health check of model validation framework
- ✓ Executive training on model risk
- ✓ Setting up model tiering framework
- ✓ Development of automation tools



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