Corporate Challenges in Model Risk Management: Moving Beyond Model Inventory

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Corporate Challenges in the Development and Implementation of Effective Model Risk Governance

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Disclaimer

Opinions expressed are those of the speaker and are not necessarily endorsed by the speaker’s employer.
Introduction and background

I am or have been recently:

• A “recipient” of the policy as a business group CRO
• The owner of the Management of Model Risk policy
• Responsible for aggregating all risks into an ERM view and presenting them to the Executive and the Board
• Never an actuary
19th century models
My journey

• “Model risk? What’s model risk?”
• “Oh, there’s a policy. This is a pain but we need to comply.”
• “Ah, I understand why we’re doing this.”
• “Why won’t the business groups engage in this?”
• “How can we get them to engage?”
• “Why do we still have errors?”
• “What does this tell us about the risk profile of the enterprise?”
“Oh, there’s a policy.”

- Board-approved
- Defines “model risk”
- First line of defence owns models and model risk
- Defines a “model” and a “calculator”
- Sets out how to classify a model – probability and impact
- Describes vetting requirements – scope, frequency, reviewer
- Models must be inventoried
- Sets expectations for ongoing management
- Oversight and reporting
Challenges in embedding requirements

• Are we questioning fundamental professional competencies?
Challenges ..... 

• Do all users understand the value, indeed the necessity, of what we are doing?
Challenges ..... 

• How do we know we have covered all models?
Challenges .....  

• Are we doing the right things .... efficiently?
Challenges ..... 

- What is our risk appetite?

Illustration of terms used in risk appetite statements

Legend
- Risk Capacity
- Approved risk appetite
- Firm-wide risk profile
- Temporarily exceeding approved risk appetite
Challenges ..... 

- Are we addressing the real risk?
Challenges ..... 

• Do we have the right technology, does it do the right things and are our people using it?
In conclusion

• Do you have the right organisational culture?
• Do you have the right technology to support the policy?
• Can you measure model risk against risk appetite?
• Does this help anticipate and prevent problems?
• Regulatory risk remains

• The problem is more than “pure” model risk – are we addressing the real risk?
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Outline

• Observations of What End Users Want From the Model Risk Management Technology
• Levels of Maturity Against the Requirements
• Challenges Faced
• What Does the Future Hold
Ian Francis – World Wide Product Leader – IBM Model Risk Governance

• A non quant
• Not a coder
• Prior life in Governance, Risk and Compliance

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What Do End Users Want?

First lets look at who we are trying to support

• Execs, Model Owners, Validation teams, Developers, Model Users, Regulators

Each have their own specific needs centred around Models

Some users are looking for

• Model Governance
• Model Risk Management
• Model Management (an operational support tool)

The firm wants all 3 of these broad use cases to be met

In spite of all of this differentiation, there are common elements
Common Elements

• Be **easy** to use; intuitive

• Provide useful, high quality, accurate, **easy** to understand output to those inputting information (feedback loop)

• High quality reporting

• Do what you need it to do from a business perspective – inventory, document repository, action tracker, reporting tool – **easily**
Can It Be Easy?

First observations to a non quant/outsider, we are trying to make an inherently complex of concepts, content processes and make understanding them ‘easy’
Actually We Are all Heading in the Same Directions

When it boils down to it, we are all trying to make sure that:

- The model achieves its outcomes
- Supports the right decisions
- Doesn’t go wrong
- Adds value to the business
What Role Do People Play in Governing Models

Model Developers
- Development Standards adhered to
- Maintenance of Code, Documentation, Data
- Implementation of Changes

Model Owners/Users
- Models used as intended
- Model performance monitored
- Oversight & Ownership of changes

Boards/Exec
- Accountability & Challenge assumptions
- Review Model Risk from an aggregate position
- Development and Ownership of Policy & Standards

Model Validation Teams
- Oversight
- Monitoring
- Detailed Review and Challenges
1,3 or More Systems

Model Governance

Model Risk

Model Management

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Encompassing Broad Capabilities

### Actors
- Model Risk Manager
- Model Validation
- Model Development
- Board Member
- Internal Audit
- External Audit
- Regulator

### Platform
- Code Control
- Business Glossary
- Data Dictionary
- Data Mapping
- Document Storage

### Model Management
- Inventory
- Lifecycle
- Collaboration
- Versioning
- Documentation
- Ownership

### Model Governance
- Workflow
- Issue Mgmt
- Notifications
- Auditing
- KPI/KRI
- Reports and Adhoc
- Policies
- Security
- Dashboards

### Model Validation & Accuracy
- Vetting
- Validation
- Documentation
- Waivers
- Backtesting / Stress
- Quantification
- Approvals
Model Risk Governance Requirements

Deployment / Inventory
- Model Register & Documentation
- Model Development & Deployment Lifecycles
- Inventory Overview & Insight

Change Management
- Model Change Documentation
- Initiation, Approval & Implementation process
- Audit Trail

Monitoring & Review
- Performance Monitoring
- Model Review & Validation
Maturity Stages – Inventory Management

**Simple**
- Model Register with Meta data
- Documentation

**Aligned**
- Capturing Model Inputs / Outputs
- Assessing Model Risk
- Viewing and managing Model interdependencies
- Dynamic Workflow

**Integrated**
- Linkage with Data governance
- Integration with Model Development tools
- Integration for Model Deployment and Operational control
Maturity Stages – Change Management

**Simple**
- Manual changes documented

**Aligned**
- Model Changes approved and managed
- Deployment of Changes tracked

**Integrated**
- Integration with Model Development tools
- Integration for Model Deployment and Operational control
# Maturity Stages– Monitoring & Review

## Simple
- Recording basic Model Validation outcomes

## Aligned
- Manually recording Model metrics
  - Model Performance
  - Model Operations
  - Governance Framework scores
- Resolution activities as a result of Model Validation
- Validation resources

## Integrated
- Integration with Models for automated performance metrics
- Use of MRG tools to schedule and resource plan Model Validation Activities
- Data lineage and quality early warning
Challenges Clients Face with Their Technology

Implementation
- Getting the ‘right’ resources
- Making it perfect

Integration
- Broad footprint of existing Model technology.

Application of Technology
- How to align methodology and process change to a new system
Down to the Specifics

Model Visualisation
- Model Dependencies
- Data Lineage (in particular what to do with Excel!)

Documentation
- Making the vast amounts of content available to stakeholders

Integration
- Depth and breadth of Integration of Model Management

Time to Value
- How to split a programme into consumable elements that deliver value
IBM Enterprise Model Risk Governance

Model Inventory Management

Model Change Management

Model Vetting, Validation & Review

Model Metrics & Monitoring

Issue Management

Regulatory Interaction & Alignment

Enterprise Model Risk Governance

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What Does the Future Hold

Future

- Enhanced Integration
- Predictive analytics
- Making it easier
- Significant regulatory pressure
- Improved visualisation

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Summary

• A firms Model governance activity is complex with many stakeholders with many requirements

• It's up to Solution providers to work with clients to make it ‘Easy’ ‘Easy’ gets user buy.

• There are varying levels of maturity for a firms requirements and Model Risk systems should be able to cater for combinations of these maturity levels (such as IBM’s Enterprise Model Risk Governance platform)

• There is an exciting future for Model Governance
THANK YOU