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AML Model Risk Management

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Key Takeaways



Objectives

- 1) **Outline a Comprehensive Model Risk Management Framework:** Present a detailed overview of a robust model risk management framework.
- 2) **Highlight the Significance of AML Model Risk Management:** Raise awareness about the critical importance of managing model risk specifically AML contexts.
- 3) **Share Best Practices for Initiating an AML Model Risk Management Program:** Provide actionable best practices for launching an effective AML model risk management program.



Introduction



Regulatory timeline & references

- OCC 2000-16: First definition of models and model risk
- OCC 2011-12/FRB SR 11-7: Supervisory Guidance on Model Risk Management.
- January 2017: NYDFS Part 504.3: Transaction Monitoring and Filtering Program Requirements
- April 2021: Interagency Statement on Model Risk Management for Bank Systems Supporting Bank Secrecy Act/Anti-Money Laundering Compliance



Regulatory timeline & references

Current FFIEC Examiner's Guide – BSA/AML:

Suspicious activity monitoring systems typically include employee identification or referrals, transaction-based (manual) systems, surveillance (automated) systems, or any combination. Examiners verify that credit unions using automated systems to monitor and detect suspicious activity have a good understanding of that technology. Third-party model validation can provide examiners with assurance the BSA/AML modeling software is detecting potentially suspicious activity and operating effectively.

The authority to establish or change expected activity profiles should be clearly defined through policies and procedures. Controls should ensure limited access to the monitoring systems, and changes should generally require the approval of the BSA compliance officer or senior management. Management should document and be able to explain filtering criteria, thresholds used, and how both are appropriate for the bank's risks. Management should also periodically review and test the filtering criteria and thresholds established to ensure that they are still effective. In addition, the monitoring system's programming methodology and effectiveness should be independently validated to ensure that the models are detecting potentially suspicious activity. The independent validation should also verify the policies in place and that management is complying with those policies.



What is a model?

- A quantitative method, system, or approach that applies statistical, financial, or mathematical theories, techniques, and assumptions to process input data into quantitative estimates.
- A model could be used for:
 - Analyzing business strategies.
 - Informing business decisions.
 - Identifying and measuring risks.
 - Valuing financial statement exposures.
 - Measuring compliance with internal limits.
 - Meeting financial or regulatory reporting requirements.



AML model risk

- Model Functionality
- Data Quality
- Insufficient Training and Resources
- Model Governance and Oversight
- Non-Compliance with Regulatory Requirements
- Lack of Model Coverage



Polling question #1

What AML models are you relying on?

- A. Verafin
- B. Jack Henry – Yellow Hammer/Defender
- C. FCRM – AML Manager
- D. Abrigo
- E. Other
- F. We rely on a manual monitoring process.



Model Risk Management Framework



Polling question #2

How confident are you feeling about your model risk management program?

- A. Very confident *(Nothing gets by our organization and our program is best-in-class!)*
- B. Confident *(We have established a formal program that we believe is generally effective.)*
- C. Minimal confidence *(We know we have a basic program, but there are likely gaps.)*
- D. Not confident at all!



MRM Framework

MODEL
GOVERNANCE



DEVELOPMENT,
IMPLEMENTATION,
AND USE



MODEL
VALIDATION





Governance



Board and management oversight



Board

- Culture and tone
- Delegation to board committees

Senior Management

- Establishing policies and procedures
- Assigning competent staff
- Ensuring effective challenge
- Reviewing validation and internal audit reports
- Ensuring prompt remedial action



Policies and procedures



- Model definition and criteria
- Establish internal controls
- Define acceptable development, implementation, use, and validation activities
- Describe process for assessing model risk
- Standards for model inventory
- Documentation expectations
- Define ongoing monitoring expectations
- Standards for data management



Model inventory



- Why?
- How?

• Identifier	• Validation activities
• Version	• Status
• In-house vs third-party	• Policy exceptions
• Owner	• Source of inputs
• Type	• Outputs and use
• Purpose	• Roles & Responsibilities
• Issues and limitations	• Remedial status



Risk assessment



- The level of review applied to each model should be commensurate with the level of risk posed by the model.
- More frequent and extensive review will be applied to the most complex and highest impact models.
- Example risk ratings:

Tier 1	High materiality or external disclosure/regulatory impact, very complex
Tier 2	Moderate materiality or complexity
Tier 3	Other



Documentation



- Support for implementation decisions.
- Data coverages, sources, quality, limitations.
- Expected performance with KPIs and KRIs.
- Change logs
- Documentation expectation for in-house model vs third-party models.



Model Development, Implementation, and Use



Development and implementation

- Understanding your third-party models.
 - Developmental evidence, including data used
 - Adequate testing that shows the third party's product works as expected
 - Documentation on limitations and assumptions
 - Clear instruction for implementation, specifically around parameters and thresholds
- Monitoring for changes
 - Impact analysis



Model use

- Ensure understanding of acceptable model use.
 - Limitations and weaknesses
- Feedback from model users.
 - Feedback on model performance (reporting of KPIs and KRIs)
 - Encourage two-way communication with validation team.
 - Self assessments to identify issues.



Model Validation

Model validation



Evaluation of Conceptual Soundness



Ongoing Monitoring



Outcome Analysis



Model validation

Example frequency and expected activities by risk tier:

Tier	Frequency	Activities
Tier 1	Every year	Independent validation
Tier 2	Every other year	Independent validation, could review changes to model, or key assumptions
Tier 3	Every third year	Internally inspected by institution personnel with appropriate skill & knowledge



Model validation

Evaluation of Conceptual Soundness

- Designed to achieve the intended objectives?
- Evaluation of model developer's evidence?
- Are biases present?
- Are all applicable risks considered?
- Sensitivity analysis and testing.



Model validation

Ongoing Monitoring

- Process verification:
 - Verification of internal and external data inputs
 - Input processing is occurring as expected
 - Comparing actual outputs to expectations
- Benchmarking:
 - Challenger model comparison



Model validation

Outcome Analysis

- Selecting the best approach to outcome analysis:
 - Credit pricing model
 - BSA/AML model (ATL/BTL)
 - Fair lending models (file comparison)
 - Back-testing



Common validation findings

- BSA/AML:
 - Minimal documentation to support model decisions, assumptions, and limitations.
 - Ongoing tuning/calibration
 - Data mapping
- Interest Rate Risk Models
 - Establishment of policy limits and tripping those limits
 - Revision of key assumptions
- CECL Models
 - Concerns with significant assumptions/inputs
 - Qualitative factors
 - Over reliance on model vendor's documentation



Polling question #3

How frequently are you validating your AML model?

- A. Every year
- B. Every other year
- C. Once every three years
- D. It depends.
- E. Our model has not been validated.



Managing AML Model Risk



Common issues

- Model Complexity:
 - Increased sophistication of AML models
 - Reliance on qualitative and quantitative components
- Data Quality and Availability
 - Issues with data quality and availability
 - Inaccurate or incomplete data affecting model performance
- Resource Allocation
 - Insufficient resources for effective model risk management
 - Need for specialized analytical and statistical expertise



Consequences

- Regulatory:
 - Potential for fines and penalties
 - Increased regulatory scrutiny
 - Risk of enforcement actions and legal repercussions
- Financial Loss
 - Increased operational costs due to remediation efforts and potential look-back requirements
 - Potential loss of business opportunities
- Internal Challenges
 - Resource allocation challenges
 - Demoralization of staff due to increased pressure
- Reputational Damage



Managing AML model risk

- Internal Controls Development:
 - Establish robust internal controls tailored to AML requirements and associated models
 - Define clear roles and responsibilities for AML model risk management
 - Regularly update controls to adapt to regulatory changes
- Model Validation & Ongoing Monitoring
 - Perform independent validation
 - Continuously monitor model performance (KPI/KRI)
 - Implement data quality checks (system balancing)
- Training for staff and key users of the AML model
- Documentation and Reporting to Senior Management



Developing an MRM Program



Where to start?

- Model Inventory and Documentation
 - Create an inventory of all models used for compliance
 - Document model assumptions, limitations, and methodologies
- Governance and Framework
 - Develop model risk management policy
- Risk Assessment and Validation
 - Conduct initial risk assessments
 - Perform independent model validations
- Internal Controls and Monitoring
 - Develop robust internal controls
 - Establish monitoring mechanisms



Key Takeaways



Key takeaways

- Model Risk Management: Essential for mitigating risks
- Governance: Robust structure, clear roles, board oversight
- Development: Sound principles, reliable data, documented assumptions
- Implementation: Rigorous testing, consistent use, regular updates
- Validation: Independent, qualitative and quantitative, documented findings & remediation
- Internal Controls: Tailored controls, ongoing monitoring
- Training: Regular staff training, compliance culture
- Continuous Improvement: Feedback loop, regular framework review



Questions?

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- Estate planning
- Family office services
- Financial planning
- Insurance
- Investment advisory
- Personal tax planning
- Trust



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