BSA/AML Model Validation

Financial Managers Society East Coast Regional  September 23, 2015

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Agenda

• Guidance & Regulatory Climate
• BSA/AML Model Risk Overview
• BSA/AML Model Validation Process
• Questions
SUPERVISORY GUIDANCE ON MODEL RISK MANAGEMENT

The 3 regulatory agencies (OCC, FRB, & FDIC) expectations on model risk and governance identify:

- Comprehensive guidance for banks on effective model risk management practices (Model development, implementation, and use; Model Validation, Model Governance)
- Expanding use of models in all aspects of banking reflects the extent to which models can improve business decisions, but models also come with costs.
- Potential indirect costs of relying on models, such as the possible adverse consequences (including financial loss) of decisions based on models that are incorrect or misused.

Reference:
OCC: 2011-12;
FRB: SR 11-7;
FDIC: Stress Testing and Model Governance: August 6, 2013
Regulatory Climate

- Increased examiner focus on AML models when assessing soundness of BSA/AML program
- Emphasis on implementation and design of transaction monitoring systems in alignment with BSA/AML risk
- Expectation on an independent assessment of an institution's utility of a BSA/AML Model
What is a Model?

• An information input component, which may consist of quantitative data, qualitative data, expert judgment and assumptions

• A processing component, which applies the mathematical technique to transform the inputs into a quantitative estimate

• A reporting component that translates the quantitative estimate into useful business information that drives decision-making and downstream processes
BSA/AML Model Examples

• Transaction Monitoring Systems
• Sanction Screening Systems
• Risk Scoring Models (Customer Risk Rating Systems)
• Case Management
BSA/AML Model Risk Exposure

• Incomplete/inaccurate customer or transactional data;
• Data mapping errors/irregularities
• Design of rules and/or configurations inconsistent with regulatory expectations and the bank’s exposure to related risks
• Lack of change management and/or adaptation to changes in products/services
• Underutilization of feature functionality
• Model selection criteria
Model Validation Approach

The validation should consider an assessment of the three fundamental elements of the Supervisory Guidance on Model Risk Management:

- Evaluation of conceptual soundness
- Ongoing monitoring, including process verification and benchmarking
- Outcome analysis, including back-testing
Model Validation Approach

• Evaluate information (data/documentation) sources and input integrity

• Review system configurations and confirm alignment to Bank’s risks

• Perform back testing of alert types and compare generated output to actual output

• Review supporting policies, operating procedures and controls

• Identify deficiencies in the design and operation of the model and recommend remediation as needed
Benefits of Model Validation

• Confirms accuracy of model inputs and outputs
• Reduces the risk of model errors
• Reduced remediation and lookbacks
• Increased operational efficiency
• Reduced cost overtime
Scope of BSA/AML Model Risk

- Conceptual Design
- System Validation
- Data Validation
- Process Validation
Conceptual Design

• Analysis of industry risk factors to assess coverage of transactional and customer risk.
• Assessment of Branch-identified risk factors to include products & services, customers & entities, geographic locations to commensurate with the Branch's business model and transactional activities.
• Comparison of automated coverage of BSA/AML risk factors alongside manual coverage controls.
• Identification of scenario coverage gaps (including calibration recommendations).
Coverage Assessment

- Review BSA/AML and OFAC Risk Assessment (and identified risk categories)
- Confirm alert types consider Money Laundering and Terrorist Financing “Red Flags”
- Assess quality of the AML system design and construction (e.g. available scenarios not in use vs. active scenarios)
- Impact analysis to identify input values potentially harmful/helpful to the model
- Manual compensating controls
Ongoing Monitoring

- Confirms that the AML system is appropriately implemented and is being used and is performing as intended.
- Determines whether the Bank is assessing the effectiveness of AML system output on an ongoing basis (AML systems are high risk and configurations should be reviewed annually)
- Management should assess the impact of changes to products, services and customer base
- Ensure alignment with Bank’s BSA/AML risk assessment
- Identify gaps in governance controls.
System Validation

- Evaluation of the functional methodology of the model.
- Assessment of system limitations to detect coverage gaps.
- Evaluation of "upstream" (Core) data points to AML to ensure investigation triggers are appropriately generated.
- Evaluation of system and scenario calibration instituted by the Branch.
How do you know you’re capturing all these transactions?

- Deposits
- Loans
- Wire Transfers
- Payments
- EFT
- ACH
- Money Instrument Purchasing

AML Monitoring System

BSA Analyst

Recommendations
- SAR
- Enhanced Monitoring
- No Action

Final Decision
Data Validation

- Analyze transaction codes to ensure accurate identification, proper categorization and mapping between the "upstream" (Core) to the BSA/AML system.
- Analyze transactions to ensure accurate identification, proper categorization and mapping between the "upstream" (Core) to the BSA/AML system.
- Back-Testing
  - Utilize "upstream" data (Core) to replicate AML scenarios. Back-testing is entirely dependent upon information available in "upstream" (Core) to allow for scenario development and alert review.
Data Integrity and Validation

- Transaction Code Mapping (identifies what is mapped, not mapped, and why)
- Transaction coverage validation verifies that all applicable transactions are accurately reflected and reconciled to the AML system.
- This process assesses the completeness of transactional data once it has been interfaced to the system.
- Back Testing includes Manipulating source reports to identify “reportable” events and determining whether an alert was generated.

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<th>Amt_Cnt</th>
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<th>Amt</th>
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Process Validation

- Evaluation of workflow and Case Management output
  - Case dispositioning
  - Alert review timeliness
  - Evaluation of actual regulatory filings vs. false positives
- Change control management and access rights.
- Management reporting.
Understanding BSA Systems Workflow
Simplified

Customer Risk Assessment

Core System
- Funds Transfers
- Electronic Banking
- ATM/Debit
- Trade
- Remittance

Customer Activity (Transactions)

Anti-Money Laundering Monitoring
Anti-Fraud Monitoring
OFAC PEP 314A

ALERTS

Case Management

- BSA Risk Assessment
- Conceptual Soundness
- BSA Staff Training
- Employee Training
- Policies & Procedures
- Culture
- Funding
Alert Verification and Back Testing

Customer Activity

- Deposits
- Loans
- Wire Transfers
- Payments
- EFT
- ACH
- Money Instrument Purchasing

AML Monitoring System

Are detection scenarios correct once you know you’re capturing them all?

SYSTEM TRANSACTION CALIBRATION

Final Decision

Recommendations
- SAR
- Enhanced Monitoring
- No Action

BSA Analyst

www.fmsinc.org | 800-ASK-4FMS
# Alert Verification

## Alert

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<tr>
<th>Date Created</th>
<th>Alert Number</th>
<th>Description</th>
<th>Workflow</th>
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System Calibration and Tuning

• While a system calibration is part of the Model Validation process, it can also be performed as a separate component to ensure ongoing alignment with identified risk factors.

• The Calibration determines that the thresholds and detection scenarios are properly configured so that the Bank can make sound decisions regarding whether further action is required.
System Calibration and Tuning

- Gain understanding of the Bank’s BSA/AML status and the recent BSA/AML activities
- Review of the established alert definitions to ensure adequate cover of all bank-wide activity
- Analyze statistical data of alert output
- Analyze features and functionality in use, configurations, and discovery of possible system-related opportunities
- Review the alert-to-case ratio for each detection scenario to identify parameters that could be adjusted to reduce the volume of “false-positives”.
- Alert-to-case ratio is a key indicator of meaningfulness
# System Calibration and Tuning

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<th>Feb</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
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BSA/AML Model Governance

- Board and Senior Management
- Updating Policies and Procedures
- Defining Role and Responsibilities
- Ongoing assessment of model performance
- Change Management and Reporting
- Assessment by Internal Audit
BSA Governance

BANK MODELS

- Development
- Implementation
- Execution and Output
- Validation

GOVERNANCE

- People
- Process
- Data
- Technology

INFLUENCES

- Economic
- Personnel changes
- Regulatory
- System changes
- Mergers/ Acquisitions
- Political

CONTROLS

- Policy
Recommendations

- When choosing a system, cost should not be a main factor
- When implementing a new system run parallel monitoring with manual reports for 3-6 months until model is validated
- BSA Officer should ensure new products/services are tracked and assess the impact on the AML system
- The volume of system alerts should not be tailored solely to meet existing staff levels.
Takeaways

- Model Risk
- Increased examiner focus on AML systems
- Model Validation Approach
- Recalibration and Tuning
- BSA Governance and Senior Management Involvement
Questions?

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