

BSA/AML MODEL VALIDATION

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Presented by:

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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 institutions utility of a BSA/AML M



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 products/services
- Underutilization of feature functions
- 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

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- 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

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- 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

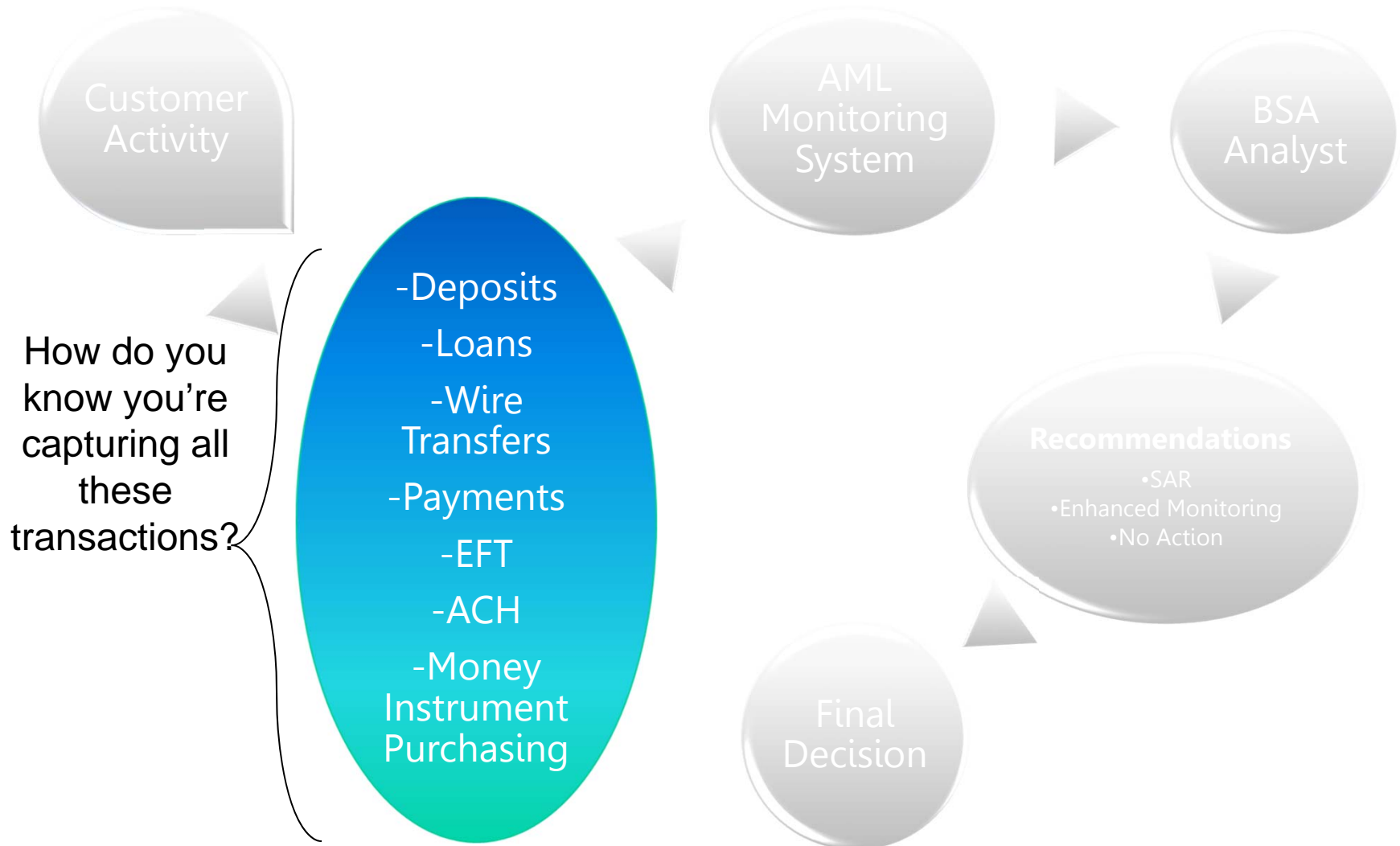
Ongoing Monitoring

- 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

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- 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.

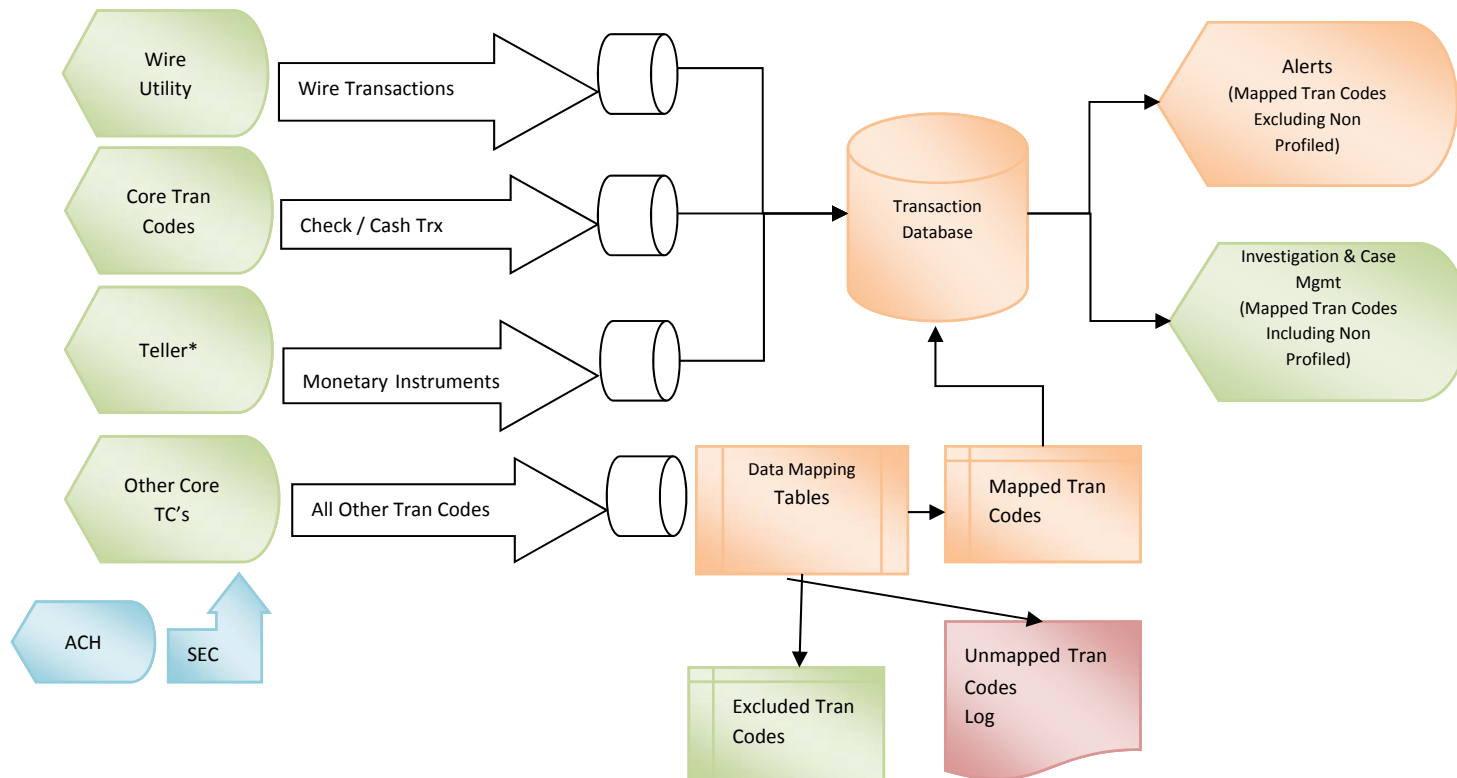


Data Validation

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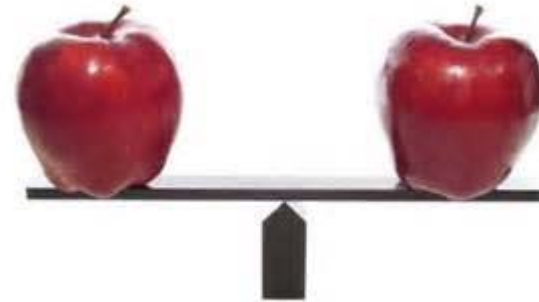
- Analyze transaction codes to ensure accurate identification, proper categorization and mapping between the "upstream" (Core) to the BSA/AML system.
- Analyze transactions to ensure accurate identification, proper categorization and mapping between the "upstream" (Core) to the BSA/AML system.
- Back-Testing
 - 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



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



Transaction Date	Amount	TC	AML Code	TC Desc	Acct_Num_Norm	TC	Amount
3/24/2014	\$1,371.26	341	LOAN	Loan Transaction	Number	LOAN	\$1,371.26
3/24/2014	\$4,258.00	9	CHCK	Check Transaction	Number	CHCK	\$4,258.00
3/24/2014	\$175.00	51	CHCK	Check Transaction	Number	CHCK	\$175.00
3/24/2014	\$175.00	51	CHCK	Check Transaction	Number	CHCK	\$175.00
3/24/2014	\$175.00	51	CHCK	Check Transaction	Number	CHCK	\$175.00
3/25/2014	\$425.26	341	LOAN	Loan Transaction	Number	LOAN	\$425.26
3/25/2014	\$59.44	51	CHCK	Check Transaction	Number	CHCK	\$59.44
3/25/2014	\$100.00	51	CHCK	Check Transaction	Number	CHCK	\$100.00

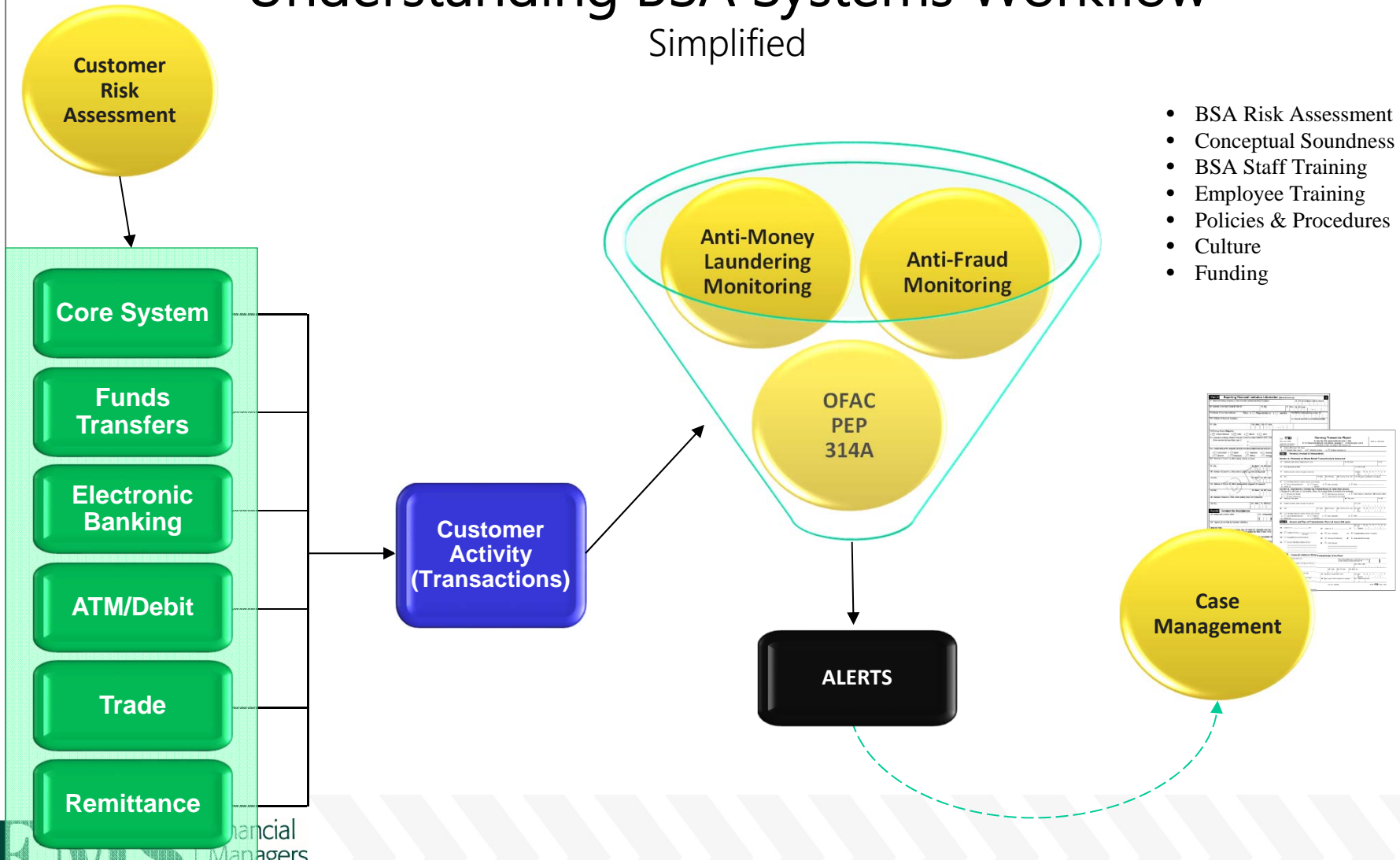
Process Validation

- 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

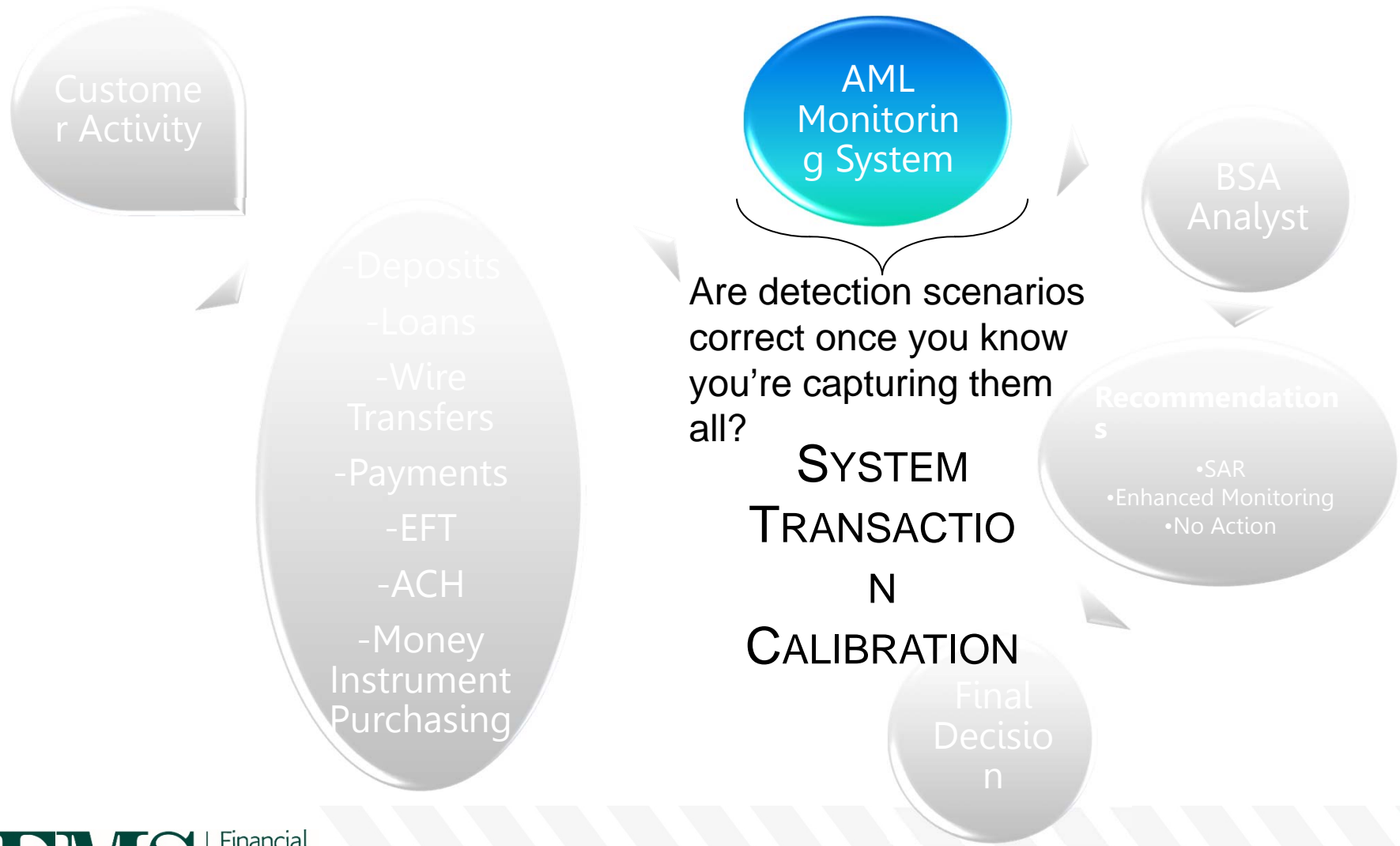
Simplified

- BSA Risk Assessment
- Conceptual Soundness
- BSA Staff Training
- Employee Training
- Policies & Procedures
- Culture
- Funding



Alert Verification and Back Testing

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Alert Verification

Alert							
Date Created	Alert Number	Description	Workflow	Subject Name	Crime Type	Crime Sub Typ	Acct
4/7/2014	867	Threshold Currency within Period (Structuring) - Individual - Period activity above \$10000 (ThisPeriod: \$15,950.00)	Alert Investigation	CUSTOMER	Money Laundering	Standard Money Laundering	Number
Underlying Transactions:							
Datestart	TransactionCode	Charge	DBCR	Mapped Trans	A_Number	Name_A	
4/2/2014 0:00	CASH	\$6,450.00	C	CASH	Number	Customer Name	
4/4/2014 0:00	CASH	\$9,500.00	C	CASH	Number	Customer Name	
		\$15,950.00					



System Calibration and Tuning

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- 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

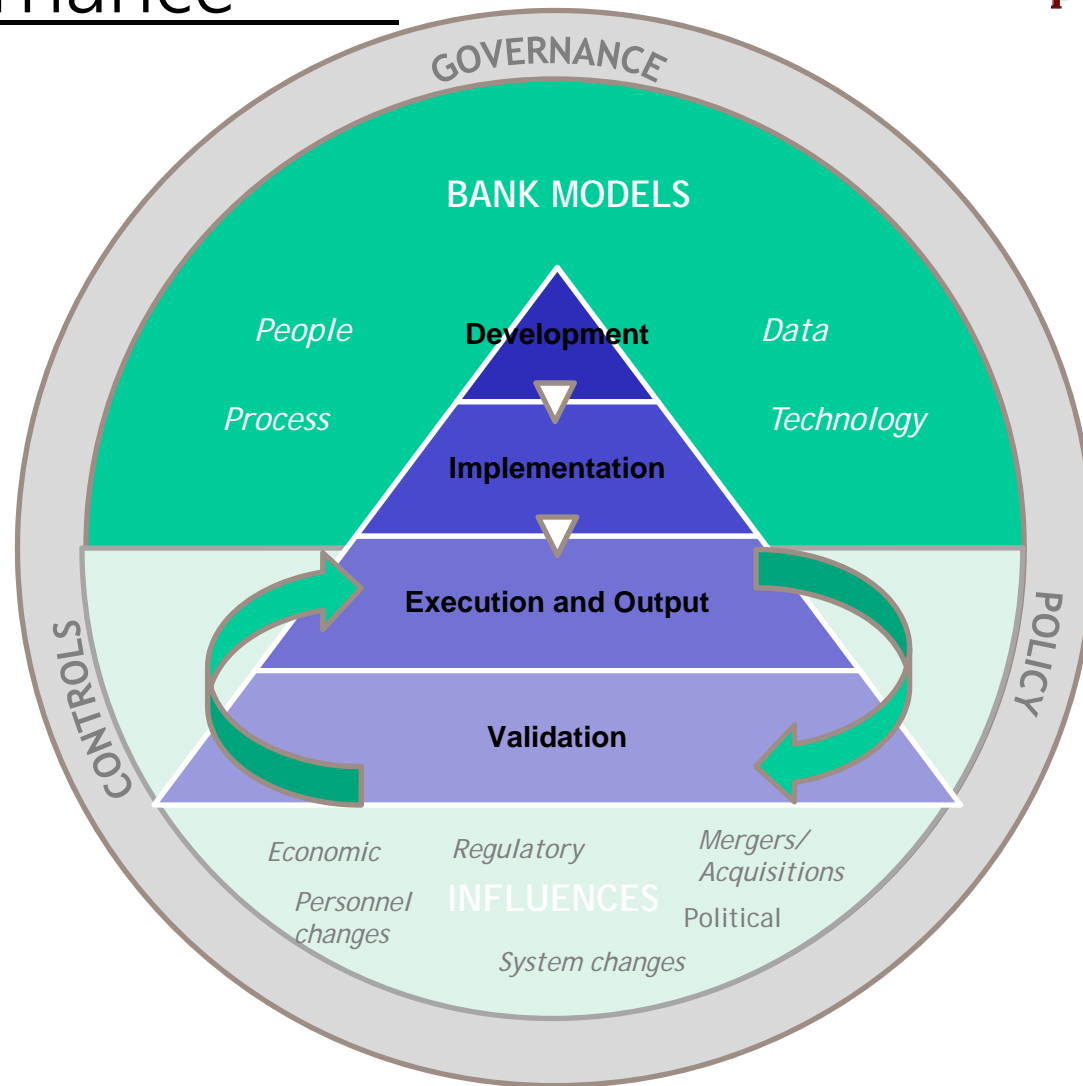
#	Coverage	Detection Scenario	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Hits	Avg. Per MTH	% of Total	Cases
1	ACH	ACHLRGDLR	12	11	9	12	16	7	10	13	8	10	0	108	10.8	27.98%	4
2	CASH	HighVolCash	8	5	7	3	1	2	2	3	1	0	0	32	2.9	8.29%	2
3	Wires	HiVolWires	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0
4	ALL	VelCsh2Wir	29	44	56	17	10	12	14	7	1	5	0	195	17.7	50.52%	0
5	Wires	1BenMulOrg	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0
6	Wires	1OrgMulBen	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0
7	ATM	ATMWKLY	0	0	1	1	0	0	0	0	0	1	0	3	0.27	0.78%	0
8	CASH	CustCashStr	6	8	6	6	6	4	6	0	2	3	0	47	4.27	12.18%	10
9	Wires	WirInOutVel	0	0	0	0	0	0	0	0	0	1	0	1	0.09	0.26%	0
		Totals	55	68	79	39	33	25	32	23	12	20	0	386	35.9	100%	16

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

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Recommendations

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- 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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