BCBS 239 – TACKLING RISK AGGREGATION AND REPORTING WITH SAS

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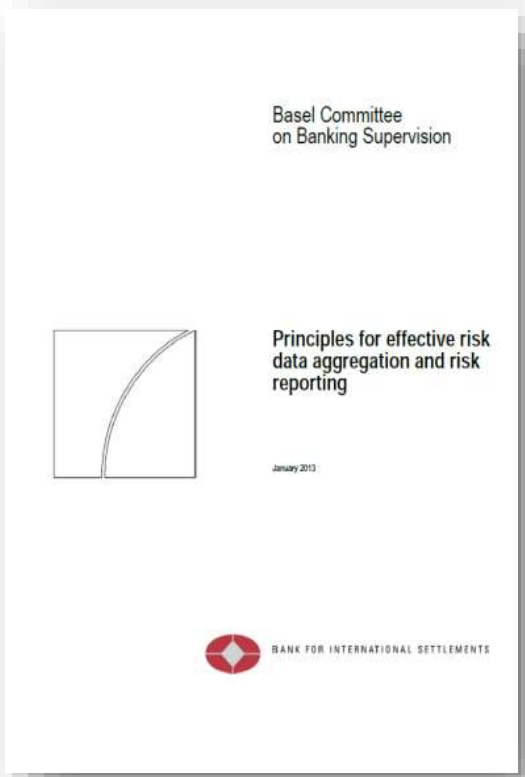


What is risk data?
All data is potentially risk data…

14 Principles in **Governance**, **Aggregation**, **Reporting** and **Supervision**

OBJECTIVE:

"to strengthen banks' risk-data aggregation capabilities and internal risk-reporting practices (the Principles) (…..) to enhance risk management and decision-making processes at banks."

- *Define a strong governance framework, risk data architecture and IT infrastructure.*
- *Ensure risk data aggregation capabilities and risk reporting practices are subject to strong governance.*
- *Design, build and maintain data architecture and IT infrastructure.*

- *Generate accurate, reliable and up to date risk data across the banking group activities in order to report risk exposures, concentration and emerging risks.*

Data is the foundation for everything related to BCBS 239.

If it's not complete and accurate, then the risk reports provided to decision makers and regulators will be incorrect, defeating the entire objective of BCBS 239.

- *Ensure reports are accurate, convey aggregated risk data and are reconciled and validated.*
- *Ensure reports are comprehensive, clear, useful and set on a frequency which meets recipients' requirements.*

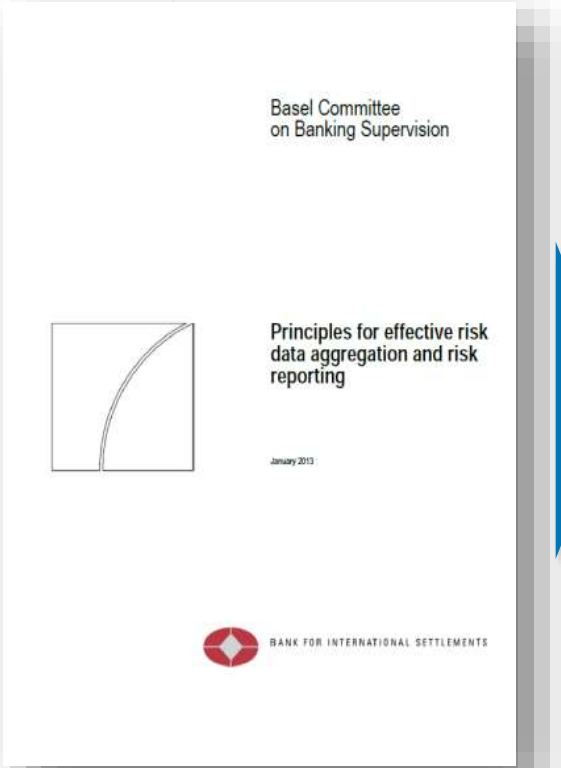
- *Supervisors should periodically review and evaluate bank's compliance to these principles.*
- *Ensure reports are comprehensive, clear, useful and set on a frequency which meet recipients' requirements.*

BCBS 239 | INDUSTRY'S CHALLENGES

Of all the pieces of regulation coming out from various regulators, over the last 10 years, across the world, this one has the biggest gap between theory and practice.

Peyman Mestchian, Chartis Research Managing Partner

BCBS 239 WHAT'S NEEDED: PROCESSES AND PRIORITIES



5 Proposed Action Areas

- Enable harmonization and integration of risk and financial data
- Create a Unified Data Pool for consistent Risk Analysis
- Establish Automated, Flexible Risk Reporting
- Use Data Governance for Full Data Transparency
- Run Real-Time simulations

BCBS 239 | Enable harmonization and integration of risk and financial data

Goal:

Streamlining and integration of risk and finance data infrastructure

Challenges:

- Integration of various “worlds”/environments up to now highly siloed
- Transparency and common understanding of processes and data

Solution:

- Set up a unified data repository that will accommodate both Risk and Finance data with automated controls and reconciliation processes
  - Integration at all levels of data architecture (data storage, calculation engine, reporting)
  - Access to various data sources
- Facilitate the process of creating knowledge in risk and finance in a way that is transparent, flexible and timely
  - Comprehensive and consistent ICAAP
  - Increase transparency and incorporate risk information into capital planning and management processes
  - Foundation for common data management and standardized data methodologies

BCBS 239 | Create a Unified Data Pool for consistent Risk Analysis

1. 2. 3. 4. 5.

Goal:

Standardization of data management for all risk processes

Challenges:

- Incosistent data from various risk types and groups
- Incosistent entry parameters and portfolio definitions
- No common risk data repository

Solution:

- Focus on consolidating risk management to reduce complexity
- Deploy multiple, standardized ways for technical departments to rapidly integrate additional data as it becomes available
- Consideration of individual risk type analysis requirements
  - Risk specific data marts
  - Historization of Data
  - Consideration of High Performance Concepts i.e. Event Stream Processing
- Establish a standard, self-descriptive data model for all organizational data spanning all data silos

BCBS 239 | Establish Automated, Flexible Risk Reporting

Goal:

Built an Enterprise wide risk reporting and ad-hoc analysis framework

Challenge:

- Manual reporting processes
- Inflexible standard reporting
- Flexibility provided only through MS OFFICE related products

Solution:

- Provide access to users to high performance and flexible reporting solutions for standard as well as ad-hoc reporting
  - quick, flexible Data access (Access Interfaces)
  - quick, flexible Data preparation for analysis (High Performance Technologies)
- Flexibility for integrating additional data as it becomes available to detect previously unknown relationships
- Reporting solutions should free risk managers from everyday tasks - particularly in data management – focus on analysis
- Make risk comprehensible to a broader user base so that risk insights are more likely to be used in everyday workflows and decisions

BCBS 239 | Use Data Governance for Full Data Transparency

Goal:

Process for a data governance report on data content and data quality

Challenge:

- Data Governance is not supported from a technical or process point of view
- Data Quality is not consistently maintained or monitored

Solution:

- Build up data transparency
  - Assign a data quality mark to BoD reports, including data quality dashboards, seals and indicators
  - Enterprise wide definitions using consistent metadata by the business
  - Clear assignment of responsibilities
  - Optimize cooperation between Business and IT
- Automate the Data Quality Process through
  - Close integration between business, IT and risk management.
  - Business users can profile data and create business rules to be applied by the IT department
  - Automated monitoring and optimizing of data quality

BCBS 239 | Run real-time, forward looking simulations

Goal:

Real-Time, Reliable Simulation and Stress Tests

Challenge:

- Processes are batch-oriented and sequential
- Technology for real time or near-real-time processing not established in Banks

Solution:

- Set-up infrastructure that allows for easily configurable scenarios and stress tests
- Provide for solutions and infrastructure with high-speed data processing capabilities that can make available results in a timely fashion
  - High Performance technology (in-memory, in database, etc.)
- Make available simulation environments to every user

BCBS 239 | Points to execute – Overarching governance and infrastructure

1. Governance

- Data Governance technologies to support documenting all data used (Data Glossary) and support a framework for the establishment and documentation of responsibilities (roles)
- Automated data quality monitoring (reports) will address the continuous measurement and improvement of data quality

2. Data architecture and IT Infrastructure

- Data Management and Master Data Management technologies to provide Banks the capability to easily access various data sources and formats to maintain an integrated architecture with single identifiers across the business.
- ESP technologies to access raw data fast (real-time) and as needed
- Data Federation technologies along with a structured business data model will be used to cover the completeness and adaptability

BCBS 239 | Points to execute – Risk data aggregation capabilities

3. Accuracy and integrity

- Data integration technologies to automate aggregation of data from disparate sources
- Data quality technologies to measure and monitor the accuracy based on predetermined metrics
- Electronic data dictionary
- Pre-defined banking specific data model to be the single data repository for all risk data

4. Completeness

- Data integration technologies to collect all risk data
- Pre-defined data model to provide the infrastructure to support completeness and flexibility in hosting and categorizing data in all dimensions (business line, legal entity, asset type, etc.)
- Data quality technologies to measure/monitor completeness

5. Timeliness

- Data integration technologies to collect all risk data
- ESP technologies to access raw data fast (real-time) and as needed depending on the nature of the data

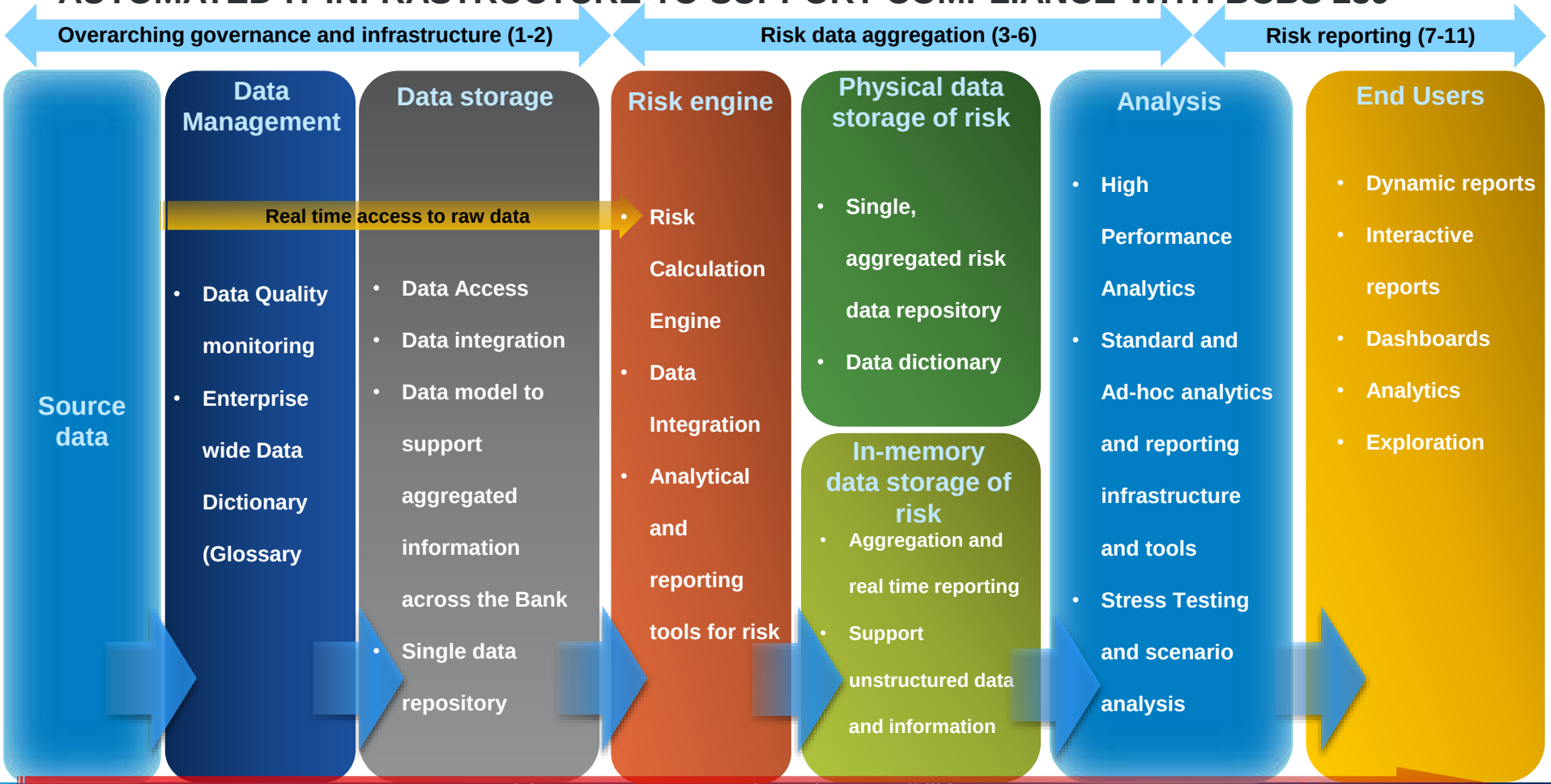
6. Adaptability

- Short onboarding process of data based on a predetermined business data model
- Using data federation technologies for data virtualization and maintain and monitor data with centralized controls.
- Processing ad-hoc requests for on-demand reporting
- Drill down capabilities

BCBS 239 | Points to execute – Risk reporting practices

7. Accuracy	8. Comprehensiveness	9. Clarity and usefulness	10. Frequency	11. Distribution
• Data governance to act as a central hub with business rules validating the data used for reporting • Through data quality technologies identification of discrepancies and rectification actions	• Risk engines will be used to produce risk aggregated information as input to various reports • Forecasting technologies will offer the ability for a forward looking view of the organization	• BI and analytics technology to provide a balance of risk data, analysis, interpretations and qualitative explanations • End user tools and visualization technology to support management level decision making	• BI and data/analytics visualization end user tools to provide the power at any time to the end user to define and produce reports based on requirements, ad-hoc and static • Ability to increase frequency in times of stress and crisis	• Technology that provides access to raw/aggregated data to the users • Technology that supports a robust enterprise reporting framework with clear roles and responsibilities

AUTOMATED IT INFRASTRUCTURE TO SUPPORT COMPLIANCE WITH BCBS 239



ARCHITECTURE – BCBS 239

Governance of Risk Decisioning

Formal Management Review & Feedback on Risk Reporting Contents

SAS RECOMMENDS

MAKE THE BCBS IMPLEMENTATION EASIER AND GET MORE VALUE OUT OF YOUR DATA

- The organizations need to start looking at their data as their most valuable asset
- Compliance with BCBS 239 is not an IT project nor a business project – it is a Group-wide initiative
- Invest in a harmonised risk and finance data repository
- Built an effective risk governance framework across the organization
- Allow risk managers to spent more time in risk analysis rather than risk reporting
- Make use of real time, high performance technologies

THANK YOU