

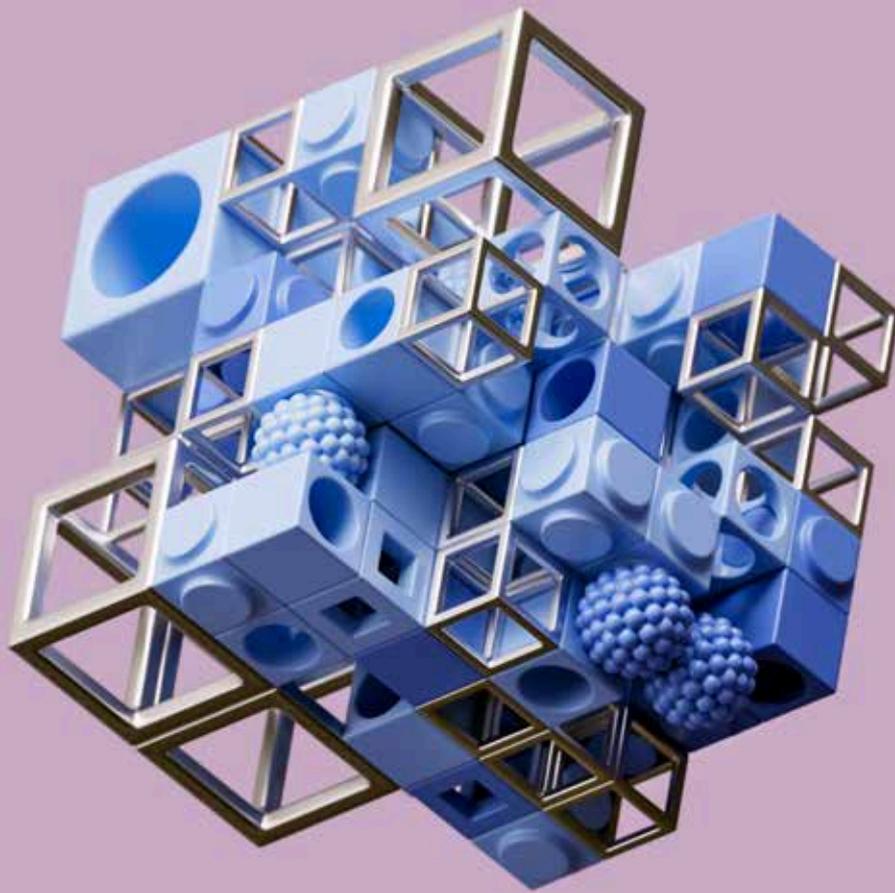
Sustaining the value of data lineage:

BCBS 239 and beyond

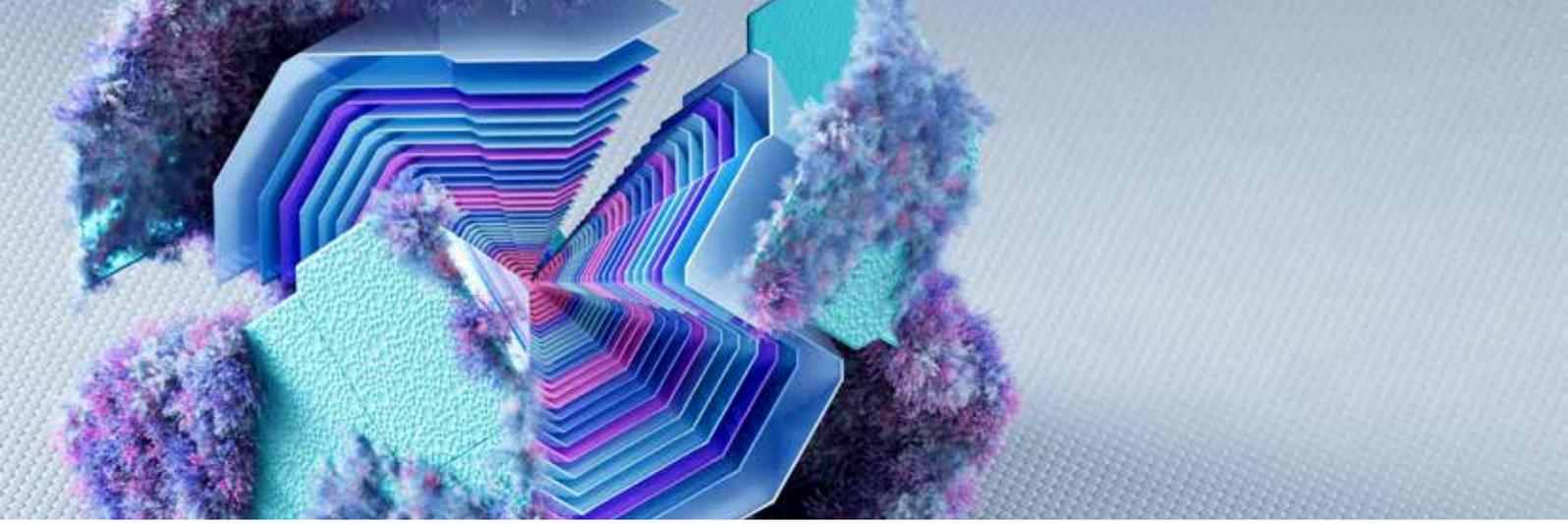
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Sustaining the value of data lineage: BCBS 239 and beyond



A strategic perspective for financial institutions

Executive summary

The 2008 financial crisis exposed critical weaknesses in banks' ability to aggregate risk data and produce accurate reports. In response, the Basel Committee introduced BCBS 239, establishing principles for effective risk data aggregation and reporting. Today, regulators require banks to demonstrate a comprehensive understanding of their data flows from origination to reporting.

Several institutions are discovering that data lineage delivers value far beyond compliance. This document explores how banks can transform lineage from a compliance exercise into a strategic asset that enhances data architecture (especially in the context of AI and Gen AI), risk management, improves operational efficiency, and enables business growth and innovation.

From crisis to transformation

As markets collapsed in 2008, many banks struggled to provide accurate and timely information about their risk exposures. Post-crisis analysis revealed a troubling reality: institutions lacked visibility into how data moved through their systems, undermining the reliability of critical risk reports.

BCBS 239 emerged as a direct response, with Principle 3 specifically addressing data accuracy and integrity. Recent regulatory interpretations, particularly from the European Central Bank, have raised expectations for the implementation of technical lineage, demanding traceability from source systems through transformations to final reports.



Common industry challenges

Financial institutions enhancing their lineage capabilities face several common challenges:

Scaling the unscalable

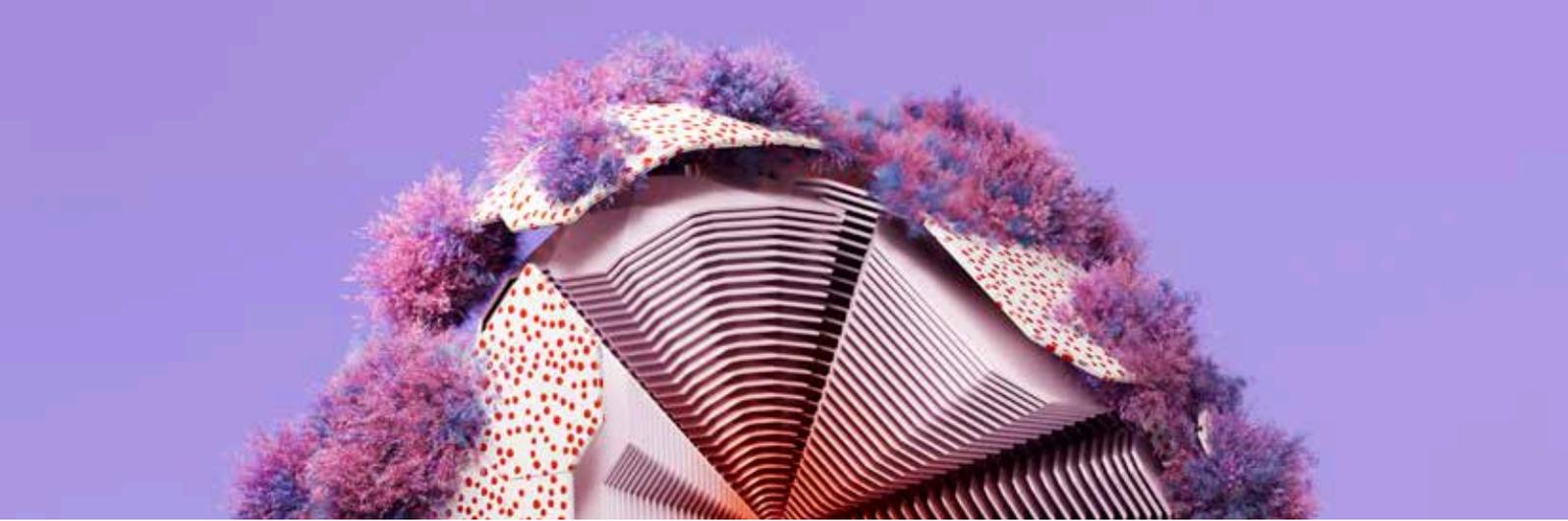
While many banks have successfully demonstrated lineage for specific use cases, scaling across the enterprise remains problematic. Without modern automation techniques, lineage documentation quickly becomes outdated as systems evolve.

Finding the right level of detail

Banks must decide on the appropriate lineage granularity – from system-to-system mapping to the most granular attribute-level approach that tracks individual data elements throughout their lifecycle.

Connecting to the bigger picture

Many organizations struggle to align technical lineage initiatives with broader data governance frameworks, resulting in isolated compliance efforts rather than integrated solutions that deliver enterprise-wide benefits.



Beyond compliance: three dimensions of value

1. Enhanced risk management and control

▪ Strengthening controls

Lineage provides a map for the precise placement of control points throughout data flows. Rather than implementing redundant controls, organizations can position them strategically at critical transformation points, improving efficiency without compromising effectiveness.

▪ Real-time risk assessment

With robust lineage capabilities, risk managers gain comprehensive visibility into data composition, enabling more accurate and timely risk assessments. When data quality issues arise, lineage facilitates the rapid identification of affected metrics, allowing for immediate remediation and improved stress-testing accuracy.

▪ Detecting anomalies

When data anomalies occur, lineage enables faster source identification. Analysts can follow established lineage paths to isolate problems quickly, improving issue resolution efficiency and enhancing the containment of data quality issues.

2. Operational resilience and efficiency

▪ Optimizing systems

Detailed lineage mapping reveals redundant data stores and transformation processes that can be eliminated to reduce complexity and cost. This system rationalization delivers benefits in maintenance costs, processing time and overall efficiency.



▪ **Confidently managing change**

Lineage provides precise assessment of downstream impacts from system changes, reducing risk during upgrades or decommissioning. Testing teams can develop targeted strategies based on a clear understanding of data dependencies, reducing testing cycles while improving confidence in outcomes.

▪ **Preserving knowledge**

Many institutions rely heavily on “tribal knowledge” about data flows that exist primarily in the minds of long-term employees. Comprehensive lineage documentation transforms this tacit knowledge into accessible information that supports staff changes and improves resilience.

▪ **Ensuring platform resilience**

For trading operations, lineage provides critical insights into data dependencies between systems, enabling better maintenance of essential functions during outages and improving capacity planning.

3. Business growth and innovation

▪ **Enhancing client service**

Lineage enables improved reporting capabilities through a better understanding of client data flows, allowing institutions to customize information delivery and respond more quickly to client queries.

▪ **Expanding market reach**

For institutions pursuing growth in new markets, lineage provides a clear understanding of existing data flows, facilitating integration with new systems and helping implement regulatory requirements more efficiently.

▪ **Accelerating product development**

A clear understanding of existing capabilities and data assets enables a faster time-to-market for new financial products. Development risk is reduced through comprehensive impact assessments, while robust lineage serves as a critical enabler for responsible AI implementation.

▪ **Unlocking data monetization**

Comprehensive lineage helps identify opportunities to leverage existing data in new ways and enhances confidence in data quality to support external sharing agreements – an increasingly important aspect as institutions explore data monetization through partnerships.



Implementation approaches

Leading institutions are moving beyond compliance-driven approaches to implement sustainable, value-generating lineage capabilities:

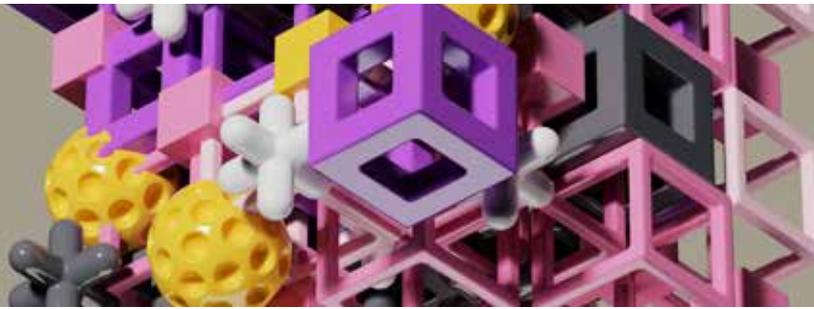
Building on critical data elements

Rather than attempting to map all data elements, successful organizations focus on critical data elements (CDEs) – data points essential to risk management and regulatory reporting – using approaches such as:

- **Prioritization:** linking CDEs to risk appetite statements

- **Tiered classification:** categorizing data

- **Regulatory mapping:** starting with elements required for regulatory reporting



Technical implementation strategies

The trusted source approach

Many institutions trace lineage to “trusted” sources rather than to original data entry points – a practical compromise between completeness and feasibility. Banks must be confident in demonstrating why sources are considered trusted, typically through evidence of controls and validation procedures.

Smart lineage automation

Manual lineage creation is giving way to automated approaches, including:

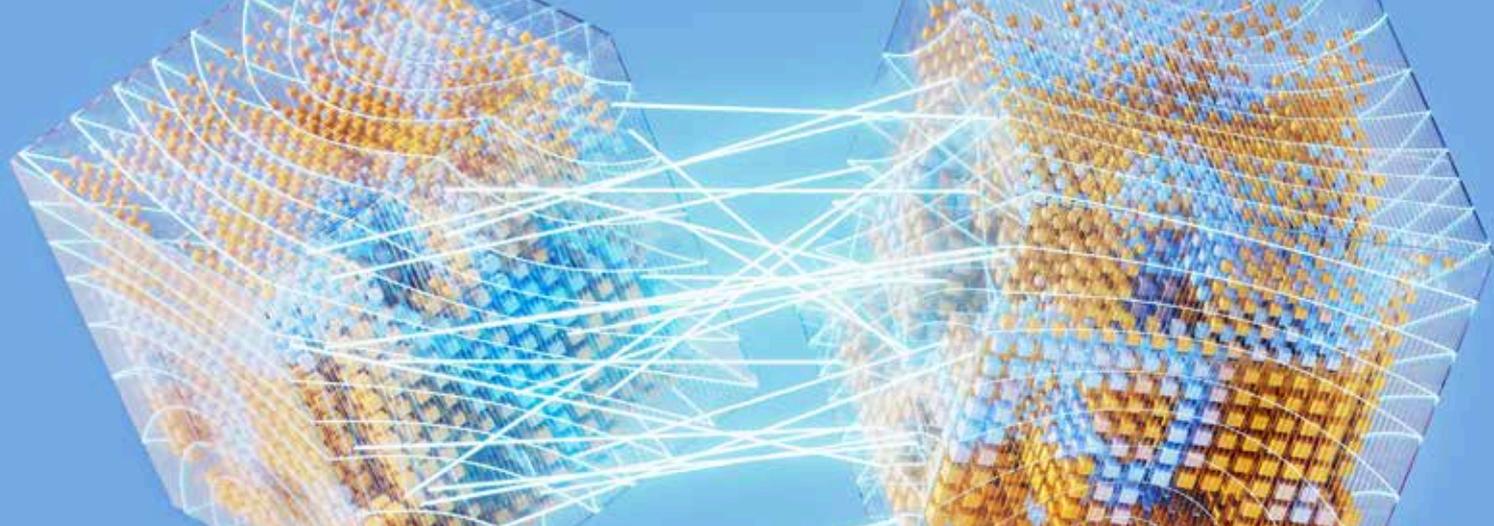
- **Metadata harvesting tools:** automatically scanning code and databases

- **AI language models:** identifying transformation rules and relationships

- **Continuous documentation:** updating lineage as code changes

Integration with data quality

Leading organizations integrate lineage with data quality by mapping metrics over lineage maps, using lineage to optimize control placement, and tracking quality metrics with direct links to lineage information.



Recommendations for financial institutions

1. Start with strategy, not technology

- Define propositions for lineage beyond compliance.
- Align with broader data governance strategies.
- Secure executive sponsorship based on business benefits.

2. Adopt a phased implementation

- Begin with high-risk, high-value data assets.
- Implement proof-of-concept for specific regulatory reports.
- Scale gradually with automation.

3. Invest in automation early

- Recognize that manual lineage is unsustainable at enterprise scale.
- Evaluate metadata harvesting and AI-based discovery tools.
- Implement continuous documentation practices.

4. Integrate with related capabilities

- Connect lineage with data quality monitoring.
- Embed in change management processes.
- Link to business glossaries and data catalogs.

5. Measure and communicate value

- Track efficiency gains.
- Document risk reduction and control improvements.
- Highlight business growth enabled by lineage.



Building a sustainable capability

Creating sustainable lineage requires thinking beyond initial implementation:

Governance integration

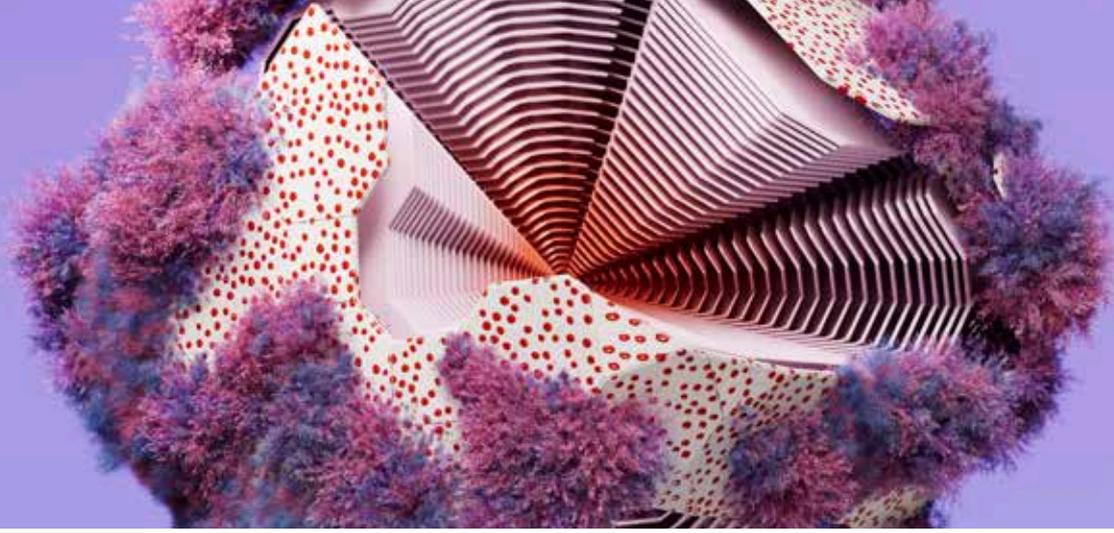
- Embed lineage maintenance into change management processes.
- Include lineage requirements in system development lifecycles.
- Establish clear ownership of lineage assets.

Modern data management

- Implement automated lineage updates triggered by code or schema changes.
- Develop business-friendly visualization layers.
- Create API-based capabilities integrated with governance tools.

Cultural transformation

- Build awareness of lineage value beyond compliance teams.
- Train development teams on lineage requirements.
- Include lineage considerations in architectural reviews.



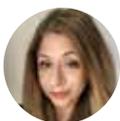
Conclusion: beyond compliance to advantage

Sustained data lineage represents more than a response to regulatory demands – it's a foundational capability for modern financial institutions. By moving beyond compliance-driven approaches to strategic implementation, banks can transform lineage from a cost center into a value driver.

The path to comprehensive lineage requires investment in technology, processes and cultural change. However, as regulatory pressures intensify and data complexity grows, institutions that establish sustainable lineage capabilities will gain significant advantages in risk management, operational efficiency, and business growth.

Those who view BCBS 239 not merely as a compliance hurdle but as a catalyst for data transformation will realize the sustained value of lineage far beyond regulatory requirements, building a competitive advantage that extends into strategic differentiation.

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