InterSystems®
Creative data technology

Celent.

Smart Data Fabric:

The Key to High-Quality Data and Better Decision Intelligence in Banking

A Celent research survey of over 100 retail banking executives in North America and the United Kingdom.

Decision Intelligence in Banking

High-quality data plays a critical role in the AI-driven decision intelligence tools that enhance fraud detection, support payments intelligence, improve customer experiences, and minimize credit risk.

Despite significant investments in modernizing data architecture over the past decade, such as migrating to cloud-based data warehouses, data lakes, and lakehouses, banks still face pervasive data issues. In fact, 60% of Tier 1 banks cite existing architectures as barriers to improving decision intelligence[1]. These issues include integrating new data sources, improving data quality, and reducing data latency.

A New Approach to Data Management

A data fabric architecture can help banks address the root cause of these persistent data challenges. This new data management approach facilitates data integration, transformation, and access across all data silos in a non-disruptive way. By connecting to data at the source, a data fabric delivers integrated real-time data to various processes and models, regardless of the data's original format or location.

InterSystems takes this approach further **by embedding a wide range of machine learning and AI-enabled capabilities** that make it faster and easier for banks to gain new insights and enhance decision intelligence—a smart data fabric.

Our solutions enable dynamic connections to any applications and data silos, both internal and external, and support the orchestration of services, application of AI and analytics, and delivery of consistent real-time data to every consumer.

InterSystems solutions can run decision intelligence models directly on the smart data fabric, helping banks overcome the limitations of data warehouses, data lakes, and lakehouses without replacing them.

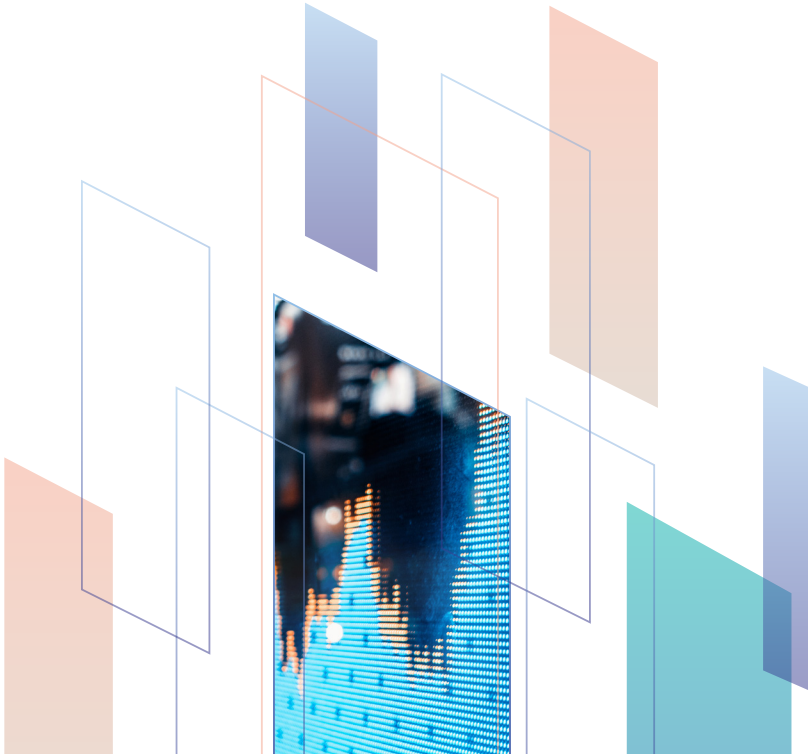
For banks aiming to thrive in the digital age, investing in decision intelligence and leveraging a smart data fabric is not just a strategic move—it's a necessity.

Why InterSystems for Retail and Commercial Banks

InterSystems is a leader in data management technology used by thousands of clients globally to build and run mission-critical data intensive applications. Retail and commercial banks rely on InterSystems solutions to perform decision intelligence, customer 360 analysis, loan origination, back-office operations, regulatory reporting, and for business reporting.

InterSystems is committed to excellence through its award-winning, 24/7 support for customers and partners in more than 80 countries.

Learn more:
InterSystems.com/Financial



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[1] Celent "It's All About the Data!" 2025

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It’s All About the Data!

Improving Decision Intelligence Models in Banking

Colin Kerr and Craig Focardi

01 May 2025

This Celent report was commissioned by InterSystems, at whose request Celent conducted a survey and developed this research. The analysis, conclusions, and opinions are Celent’s alone, and InterSystems had no editorial control over the report contents.

A part of GlobalData

Contents

Executive Summary

Banking is essentially an exercise in risk management. Whether credit approval, fraud detection, or gaining new customer insights, decision intelligence hinges on the ability to harness data effectively. As AI models become more prolific, can new data architectures enable better decision intelligence?

In an industry where there is increasing dependence on data science and quant-developed models for advanced analytics and AI, successfully and reliably building and managing models (and the data that supplies them) is more important than ever before. In addition to creating more disparate data across the bank's systems, banks must also ensure they are managing this data well. Many banks struggle to match the speed of data creation and required decisioning with correspondingly fast and robust overall data management and processing.

Decision management/ intelligence system	A business rules management system (BRMS) enhanced with suites of modeling technologies that make decisions—and which integrates the results of rules and predictive analytics models into operational systems. The system may also be made more intelligent by adding AI analytics and data fabric/data management capabilities.

InterSystems, a global provider of data management solutions, commissioned Celent to conduct an independent survey[1] of over 100 business and technology leaders from top tier banks in North America and the United Kingdom. The objective was to understand the priorities and challenges of building and managing decision intelligence platforms, models, and data across their retail banking business units.

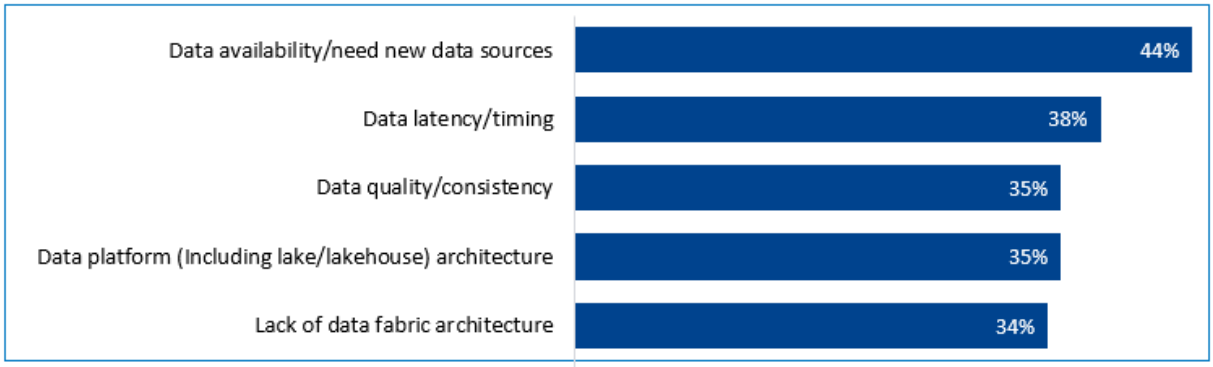
Celent's survey indicates that there is high demand to invest in decision intelligence across a wide spread of functional areas in banking. This includes acquiring new data, improving data pipelines and data quality, and of course the model logic developed by quant and data science teams. Banks will prioritize decision intelligence investments broadly across their business units—but especially in the areas of payments intelligence, fraud detection/prevention, and credit risk.

Data Challenges Are Pervasive Barriers to Improving Decision Intelligence and Model Performance

However, regardless of business function, and despite all the investments banks have made in data platforms and data management over the past 10 or so years, data issues remain pervasive! As Celent's research survey shows in Figure 1, integrating new data sources, improving data quality, and reducing the latency of data are the top three issues faced by banks of all sizes.

[1] Celent Decision Intelligence and Data Survey, 2025

Figure 1: Barriers to Enhancing Decision Intelligence



Source: Celent Decision Intelligence and Data Survey 2025, n=106.
Question: *"What barriers do you face enhancing decision intelligence capabilities/performance and related models?"*

60% of Tier 1 banks cite existing data architectures as a barrier to improving decision intelligence.

Source: Celent Decision Intelligence and Data Survey, 2025

Data management architectures are changing quite rapidly. Legacy data warehouse architectures appear to be a significant barrier for banks with higher levels of deployment. In fact, 60% of survey responses from Tier 1 banks identified existing/legacy data warehouse architectures as a barrier to improving decision intelligence, even in the midst of migrating to more modern cloud-based data platforms.

In many organizations, the traditional techniques are being replaced by data fabric—a data architecture paradigm that can help solve the root cause of data issues identified by the banks that participated in Celent's research.

A data fabric isn't a single technology per se, but a collection of integrated capabilities that include data integration and transformation, along with access and connectivity functions. Whether the source data is in a traditional data warehouse or lakehouse, a document database, or flat files, a data fabric can transform and deliver integrated data sets to passive or dynamic processes and models.

55% of banks have plans to deploy a data fabric architecture.

Source: Celent Decision Intelligence and Data Survey, 2025

As banks navigate this complex environment, leveraging data fabric architectures can provide a pathway to improved data quality and model performance. By enabling seamless integration of diverse data sources and enhancing data accessibility, banks can boost the performance of decision intelligence systems and models to deliver timely and accurate insights. By prioritizing end-to-end data quality, investing in modern architectures, and enhancing decision-making processes, banks can position themselves for success in the evolving landscape of financial services.

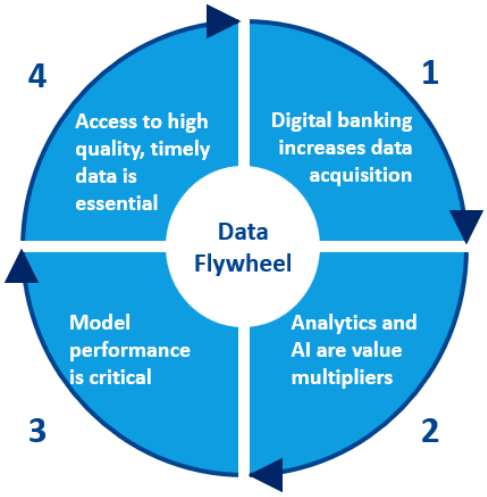
The Speed of Business Is Accelerating. Can Banks Keep Up?

With the prevalence of real time payments, new credit products that require instant decisioning, and increasingly sophisticated fraud scams, the business of banking is speeding up, globally.

Banks must respond to the growing pressure of increased client expectations, new product requirements, and faster operational decision-making—all set against a backdrop of rapidly shifting macro-economic data, competitive threats, regulations, and new risk vectors. The expectations are moving faster than incumbent banks can keep up.

Banking is increasingly digital and data-dependent. With every new data byte being produced, there is more demand for data management platforms and frameworks to be in place, especially to better leverage data for new analytics and uses such as generative AI (GenAI), and the embedding of AI into next generation products and services. This is illustrated by the "data flywheel" shown below, which illustrates how quality data is the increasingly important fuel for advanced analytics and AI, delivered through the reliable performance of quant and data science-developed models.

Figure 2: Data Has Become an Increasingly Important Asset



Source: Celent

1. Not only is more data used in processing, but more data is collected and created by banks—and increasingly from new sources, both internal and external. This data must be managed as a valuable asset.
2. The insights gleaned from that data, and the potential to use that data in advanced analytics and AI, can be a game-changer for banks—including for real time decision intelligence. AI models are enablers that allow banks to more highly leverage and monetize their data assets.

3. Data and AI are the building blocks for future banking products and services, and so the accuracy and performance of quant and AI models becomes more critical.
4. High-quality, timely data is essential to support high-speed business. Banks must continue investing in high-performance data management and integration capabilities to compete in an increasingly complex world.

Correspondingly, Celent's broader research shows that the excitement and potential of AI has driven this to the top of banks' IT spending priorities.[2] However, throughout the course of our industry analysis, Celent has spoken with many banks who also realize that they may not have their data houses in order—yet.

50% of banks ranked "**AI and advanced analytics**" as the top overall IT spending priority for 2025.

Source: Celent Dimensions Survey, 2025

In an industry where there is increasing dependence on data science and quant-developed models for advanced analytics and AI, successfully and reliably building and managing models (and the data that supplies them) is more important than ever before. In addition to creating more disparate data across the bank's systems, banks must also ensure they are managing this data well. Many banks struggle to match the speed of data creation and required decisioning with correspondingly fast and robust overall data management and processing.

The Importance of Decision Intelligence

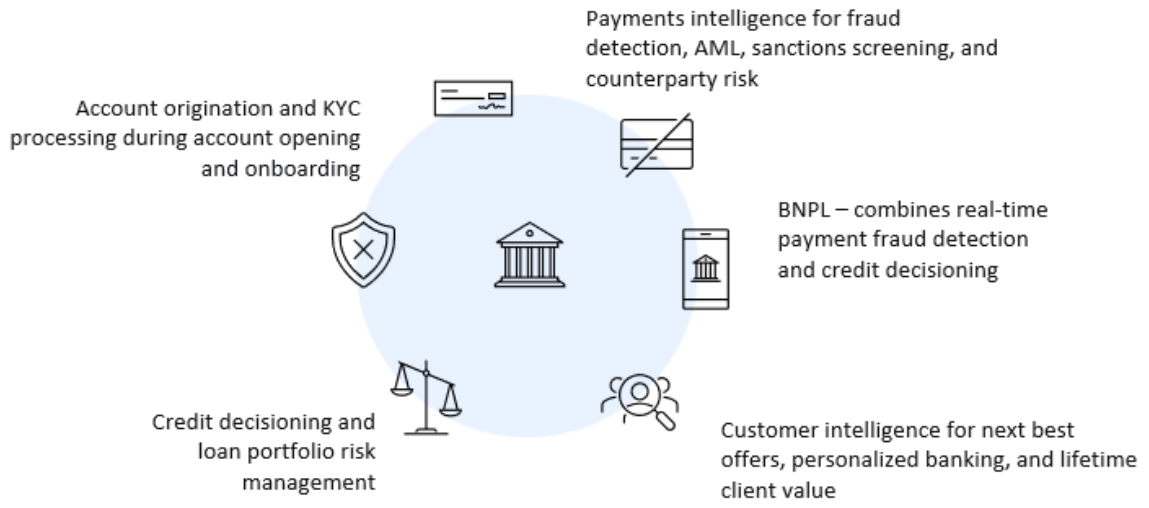
Speed and accuracy are essential capabilities of decision intelligence systems used across banking. The following scenarios are but a few examples of decision intelligence.

- Payment fraud remains a pressing operational issue. Historically, many push-payment systems had a degree of latency built in—often with batch-based processes in the back office. With the creation of new real time payment solutions, faster anticipation of fraud and operational risks is an imperative. Equally, in the card processing space, banks and their processing partners need to keep evolving fraud detection capabilities across new and emerging payment channels and devices.
- Deciding which credit requests to approve, how much to offer, and on what terms, can be extremely complex—yet to meet the expectations of customers who access their bank through a variety of apps and devices, banks must now make these decisions almost instantly. This is further complicated by the integration of credit and payments in open banking and embedded finance models, and the emergence of buy now, pay later (BNPL) products and services.
- At large retail banks, traditional risk management and decisioning capabilities are delivered by a series of different tools and platforms. Client experiences and expectations have changed since these legacy applications were implemented. Clients now access the bank and lending services via a range of digital solutions and expect quick decisions on matters of credit or to prevent fraud. At the same time, data, advanced analytics, and modeling techniques are far more sophisticated than they were five or ten years ago.

The following figure shows only a few examples of decision intelligence functions. In all cases, speed and accuracy of decisioning are essential.

[2] Dimensions: Corporate Banking IT Pressures & Priorities Global 2025 Edition, Dimensions: Retail Banking IT Pressures & Priorities 2025 (Celent, March 2025)

Figure 3: Examples of Bank Decision Intelligence Functions



Source: Celent

Decision Intelligence Solutions and Models Are Essential

The abundance of new AI programs and solutions has shone a spotlight on the importance of building and managing models, especially AI models. Of course, the use of sophisticated models is not new in banking. From quant models projecting balance sheet impacts, to fraud detection, to decision intelligence in lending—models have played an important role for years. The change today is the pace and scale at which new models for advanced analytics and AI are being developed and deployed. With that comes a heightened need for managing model performance—which places more stress on data requirements and capabilities.

In the mid-2010s, the banking industry adopted data strategies that saw the development of huge, centralized data warehouses. CDOs brought data technology and architecture to provide structure and consistency to data management standards implemented in prior years. Major technical investments included Hadoop storage clusters, data warehouses and lake houses, and widespread implementation of enterprise extract transform and load (ETL) integration tools. The dominant theme was centralized technology control over business data. However, the Celent Decision Intelligence and Data Survey interviews and data analysis show that legacy enterprise warehouses and data lakes struggle to meet the needs of an increasingly dynamic business. This is commonly exemplified by tussles over BI and analytics tools, but the root issues relate to data access, availability, quality, and timeliness. Many of these warehouses and data lakes were established for analytics use cases, and not the different dynamic of operational systems. Even cloud-based data lake and lakehouse platforms aren't immune from these challenges, especially when data needs to be injected into critical processes and models at the "right time."

Decision Intelligence Case Study: Tier 1 Global Bank Based in the UK

Celent has spoken with a top tier UK bank that transformed its decision intelligence capabilities. By focusing on high-impact risk decisioning strategies first, the bank's business case proved successful soon after deploying the new risk decision engine and risk data platform. Individual decisions take less than 200 milliseconds, and average end-to-end response times are below 500 milliseconds. This means that customers are given a decision on their application almost instantly—and that the credit risk model performance can scale across all the bank's global businesses. Furthermore, the bank is now able to introduce new credit products that require near-instant decisions (such as credit offered at point of sale). By accelerating its modeling processes, this bank can get new credit products to market faster and pivot more nimbly in response to both macro- and micro-economic changes.

Celent Decision Intelligence and Data Fabric Survey

Celent Research into Data Challenges in Model Development and Management

In addition to drawing on Celent's extensive research library and analyst insights, Celent conducted a specific survey of over 100 pre-screened bankers in Canada, the UK, and the US to understand the priorities and challenges of building and managing models and data across their retail banking business units. Additionally, 10 bankers from a mix of business and technology roles participated in confidential one-hour interviews to discuss challenges and opportunities for improving decision intelligence capabilities. The survey was conducted in January and February 2025.

In the context of this survey, Celent provided respondents with the following definitions:

Decision management/ intelligence system

A business rules management system (BRMS) enhanced with suites of modeling technologies that make decisions and integrate the results of rules and predictive analytics models into operational systems. The system may also be made more intelligent by adding AI analytics and data fabric/data management capabilities.

Data fabric

A data architecture that facilitates the end-to-end integration of multiple data pipelines (from on-premises and cloud sources) and brings data to the point of need through the use of intelligent and automated systems.

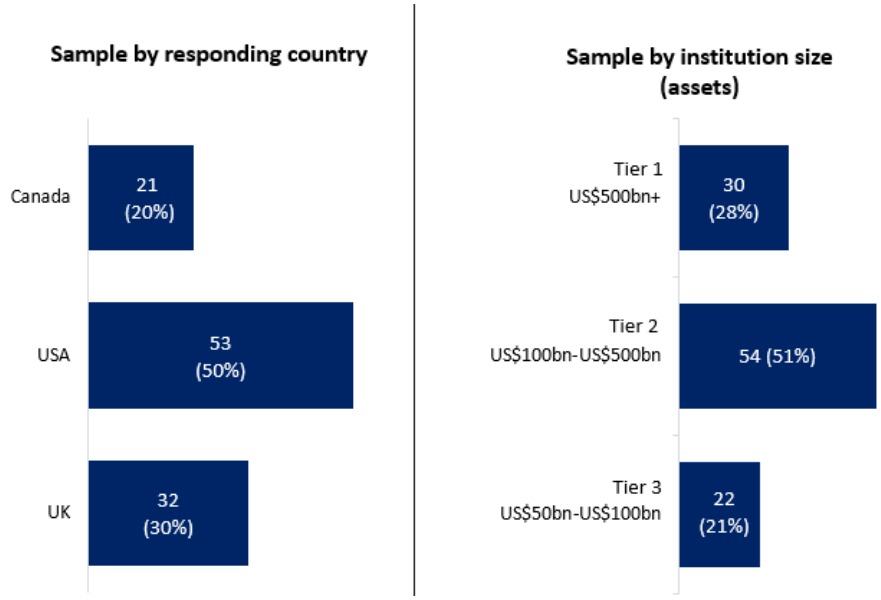
The primary survey objectives were to:

- Gain a sample representation of existing decision intelligence capabilities and priorities across functional areas.
- Ascertain the challenges and barriers faced in building and maintaining decision intelligence systems and associated models.
- Understand short- and medium-term investment decision intelligence/model priorities across business areas and related data technology investments.

A breakdown of the survey demographics is shown in Figure 4. The top tier banks in three countries were chosen specifically because of the high number of relatively large established institutions, their

role in highly competitive retail banking markets, and associated technical complexities of large bank infrastructure and operations.

Figure 4: Distribution of Survey Results by Country and Institution Size



Source: Celent Decision Intelligence and Data Survey 2025, n=106

Data Challenges Persist with Decision Intelligence Capabilities

As the need for (and dependence on) rapid decision-making increases, cracks in banks' data-handling capabilities are appearing.

Although enterprise data management platforms have been deployed to centrally manage data and access—with the intent of creating a single source of truth—Celent research shows that decision intelligence systems and related models are starving for more, better quality data.

Almost 60% of banks stated that models used in decision intelligence required performance improvements. However, this response should not be regarded in isolation. The availability of quality, timely data plays a significant role in model performance and reliability. Survey respondents noted that access to new data sources (58%) and access to quality and timely data (57%) are two of the most critical requirements to improving model performance.

It is clear that banks have major concerns about data quality, the challenge of integrating new data sources, and the corresponding impact on decision intelligence.

Figure 5: Bank Concerns About Data Used in Models for Decision-making

Source: Celent Decision Intelligence and Data Survey 2025, n=106
Question: *To what extent do you agree with the following statement. "For my business area…"*

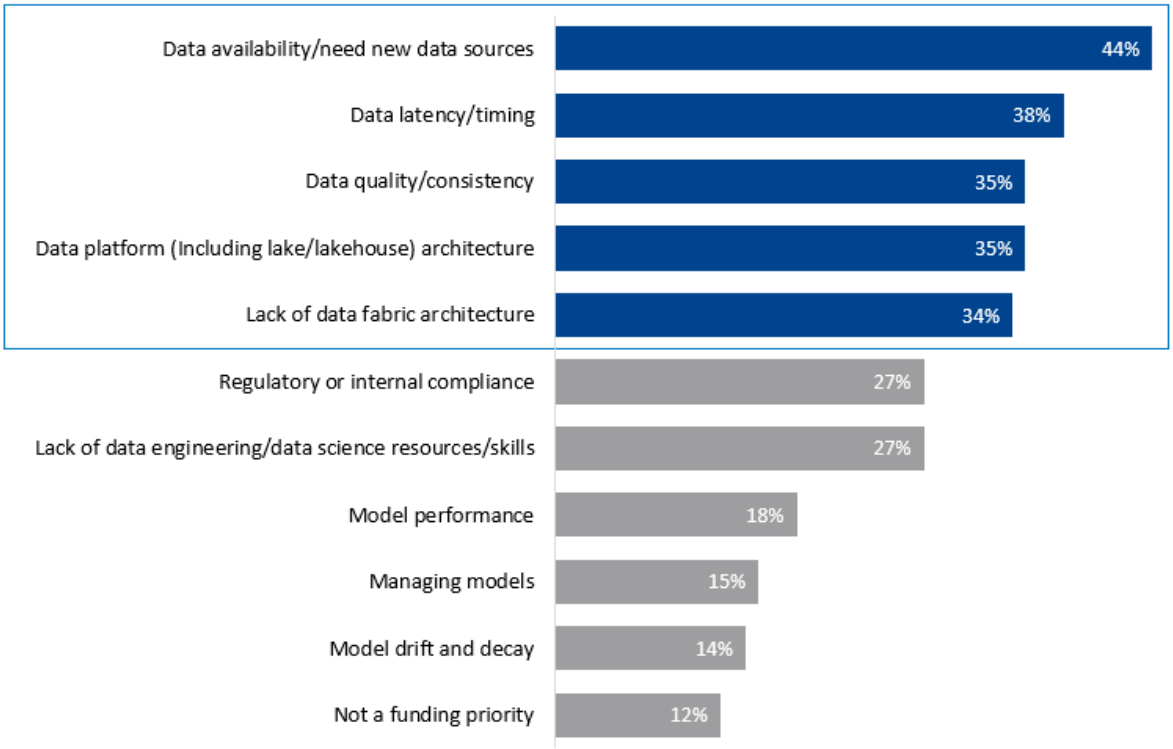
Underneath the summary results shown here, the survey data revealed that **Tier 1 (USD$500bn+) banks were the *least confident* that their decision intelligence models have sufficient access to quality data.** These Tier 1 banks are also least confident that their models are effectively managed for decay and drift. This is despite the fact that these banks are most likely to have implemented an enterprise data management program in response to regulatory pressures, as well as a centralized data architecture.

> **58%** of surveyed banks are looking to integrate new data sources and build new data pipelines to supply decision intelligence with new data.
>
> Celent Decision Intelligence and Data Survey, 2025

Data Challenges Are Pervasive Barriers to Improving Decision Intelligence and Model Performance

In Celent interviews with banks and in the survey results, data problems tend to be the leading cause of model performance issues. For all the investments banks have made in data platforms and data management over the past 10 or so years, data issues remain pervasive. As the following chart shows, integrating new data sources, improving data quality, and reducing the latency of data are the top three issues faced by banks of all sizes. This is highlighted by the dark blue bars on the chart below. Note that respondents were asked to select their top 3 challenges from the list of 11 choices.

Figure 6: Barriers to Enhancing Decision Intelligence in Banking



Source: Celent Decision Intelligence and Data Survey 2025, n=106.
Question: *"What barriers do you face enhancing decision intelligence capabilities/performance and related models?"*

Compounding these challenges, respondent banks also identified existing data platform and architecture shortcomings as the fourth- and fifth-placed challenges. Legacy data warehouse architectures appear to be a significant barrier for banks with higher levels of deployment. In fact, 60% of survey responses from Tier 1 banks identified existing/legacy data warehouse architectures as a barrier to improving decision intelligence, even in the midst of migrating to more modern cloud-based data platforms. Celent's additional qualitative research also bears this out—with banks sharing frustrations about the ability of centrally managed warehouses to deliver enough business value. Concerns were expressed about data quality problems being introduced through divergent use cases and data "contamination" across lines of business. Migration to the cloud alone cannot fix legacy data issues if the data structure, access, and integration methods are not modernized too. Additionally, the survey results analysis shows that data fabric and data mesh architectures are becoming better understood, with 34% of respondents indicating that implementing a data fabric could improve decision intelligence models and capabilities.

60% of Tier 1 banks cite existing data architectures as a barrier to improving decision intelligence.

Source: Celent Decision Intelligence and Data Survey, 2025

Rounding out the chart, there is a clear separation between the top five issues in blue, and the lower half of the chart in gray.

- Banks generally have much lower concerns about funding for decision intelligence/model development, and even the availability of data science skills and resources.
- Taken in isolation, the function of managing model drift and decay was not a highly rated barrier—suggesting an acknowledgement that upstream data completeness, quality, and latency are the root cause of many decision intelligence and model performance challenges.

> "Upstream data completeness, quality, and latency are the root cause of many decision intelligence and model performance challenges."
>
> Celent Decision Intelligence and Data Survey, 2025

Ongoing Investment Is Needed to Maintain Performance

Data may be the fuel for AI, but the reliability and accuracy of models are what drive intelligence and the ability to make reliable decisions—especially in low-latency environments. These technology investments must be inextricably linked.

Celent's research indicates that there is high demand to invest in decision intelligence across a wide spread of functional areas in banking. This applies to enhancing current decision intelligence platforms and workflows, and investment in net new capabilities. In this instance, investment covers all facets of decision intelligence—from the decision engine, to underlying models, and the all-important source and integration of quality data. This includes acquiring new data, improving data pipelines and data quality, and of course the model logic developed by quant and data science teams. The highest priority functional areas across the banking business are indicated in Figure 7 below.

Figure 7: Decision Intelligence Investment Priorities by Functional Area

Source: Celent Decision Intelligence and Data Survey 2025, n=106.
Question: *"We plan to increase investments in decision intelligence in the next 18 months in the following areas" [stack rank all that apply]*

In terms of priorities, fraud risk and payments/transaction processing models are the two areas that look to benefit most from investments in decision intelligence. Credit risk is a close third priority. When bracketed together, risk and fraud prevention (in multiple forms) will see the lion's share of investment allocation due to the high rate of "fraud innovation" that is also fueled by AI. Detection of fraud and payments-related risk are low-latency functions requiring split-second decisioning. Custom models are used extensively and are constantly being modified to address new threats and new means of accessing the bank and executing transactions. However, Celent also notes that Investment in credit risk is most highly-ranked by the largest banks—no doubt because they also tend to have the most complex application and risk infrastructures (and are held to stricter regulatory requirements).

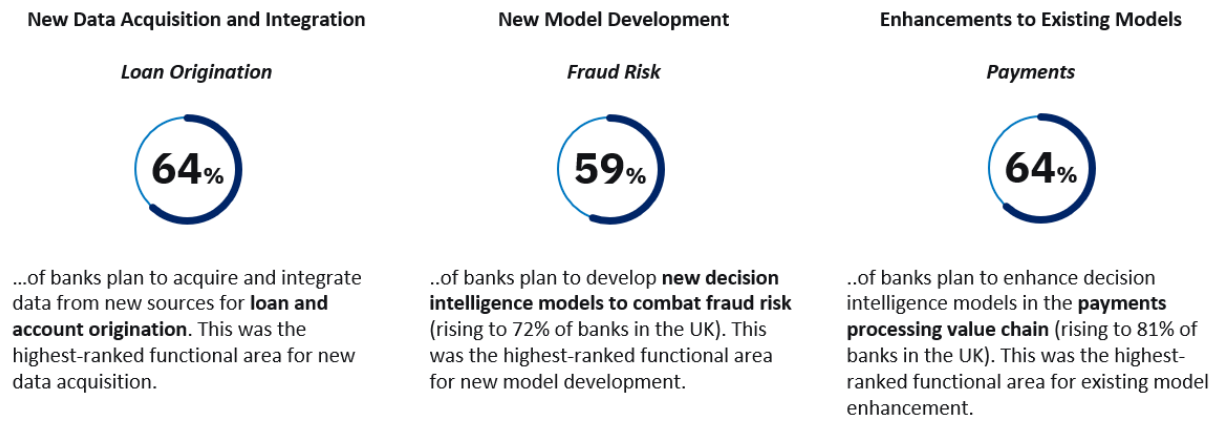
76% of banks plan to increase data science investments in the area of fraud prevention.

Source: Celent Decision Intelligence and Data Survey, 2025

Broadly, fraud also stands out as the highest priority area for increasing data science and modeling resources. This includes adoption of new technologies and increasing data science and AI human capital. Fraud risk is pervasive and constantly changing. As banks push innovation agendas and develop new products and new methods of interacting with the bank, the fraud dynamics constantly shift.

In terms of functional improvements, the following chart shows where the top investment priorities lie for new data acquisition, development of new decision intelligence models, and enhancing existing models.

Figure 8: Top Investment Areas for Decision Intelligence Improvements



Source: Celent Decision Intelligence and Data Survey 2025, n=106
Questions:
"We plan to integrate/add new data sources for the following areas"
"We plan to develop new decision intelligence models in the following areas"
"We plan to enhance performance of existing decision intelligence models in the following areas"

Data Acquisition

When banks look to acquire and integrate data from new sources, the top priority is for credit risk scoring and decisioning in loan origination, and this is more highly favored by Tier 2 and Tier 3 banks ($50bn–$500bn).

New Model Development

For new internal model development, fraud risk models stand out as the highest priority, perhaps in response to new emergent threats versus more traditional risks in other areas. As an interesting nuance, Celent's research shows that UK banks prioritize investment in new models for fraud at a higher rate (72%) than North American counterparts.

Existing Model Enhancement

In terms of enhancing existing models, payment processing decision intelligence is the overall top priority. Again, UK banks appear to be more concerned (81%) about this area than banks across the Atlantic. Canadian banks are most concerned about model performance in credit risk, followed at a distance by customer intelligence and payment risk. US banks most closely followed the summary trend with moderate concerns across the board.

Can a Data Fabric Help Solve Root Cause Data Issues?

Many banks see data fabric architectures as an enabling solution to data quality and integration challenges—especially when data is located across a shifting infrastructure estate as part of a cloud migration strategy.

Cloud Developments

Cloud and data technology has advanced significantly in the past 10 years, and new architecture paradigms, including data fabrics, have risen to the fore as technology departments look to deliver higher business value. Application software and data management technology have also evolved as financial institutions increasingly leverage data in the cloud for customer engagement, banking product offerings, risk management, and customer service.

The Celent Decision Intelligence and Data Survey identified that a significant amount of business unit data (39%) is already in the cloud, and Celent survey respondents indicate that they will steadily increase their share of data in the cloud, reaching nearly half (49%) of their data in two years. Celent believes this upward trend will continue during the next three to five years, although the rate of increase is less certain. This aligns well with Celent Dimensions Survey 2025 data that shows **59% of banks plan to move more *business-critical* workloads to the public cloud**. North American and European banks actually track above the global average. This includes new solutions that are part of the lending, payments, and fraud detection solution ecosystems, which now include more cloud-based components.

However, cloud migrations at major banks are typically staged over several years, which means the business must operate on a constantly shifting infrastructure. Celent notes that many banks have been moving data warehouse and analytics functions to the cloud. Although there are some pioneers in cloud adoption for critical banking platforms (JP Morgan and Capital One are two prominent examples), most banks still have the majority of business-critical data and operations running on-premises.

Data Architectures

55% of banks plan to deploy a data fabric architecture in the next 12 months.

Source: Celent Decision Intelligence and Data Survey, 2025

With the rapid increase in AI and development of new models—including for decision intelligence in payments, fraud, and credit risk management—it becomes clear that data must be sourced and provisioned across a broad variety of on-premises and cloud applications and data sources.

Data management architectures are changing rapidly as traditional techniques do not address the root cause of data issues identified by Celent's research. In many organizations, traditional techniques are being augmented or complemented by a data fabric. Celent research indicates a desire for lines

of business to have more direct control over their data assets—especially since they likely also own any models using that data. It is no surprise that 55% of banks surveyed by Celent plan to deploy a data fabric architecture in the next 12 months.

Data fabric is an architectural paradigm that dynamically connects to data at the source—from cloud and on-premises applications, systems, services, APIs, and internal data sources. It transforms and processes the data into a normalized, consistent format, delivering accurate data to all data consumers, such as business users, modeling environments, reporting systems, and applications. A core difference between data fabrics and data warehouses or data lakes is that a data fabric is a more dynamic and flexible pattern. Bank teams can access data from disparate source systems and silos, on demand, as requested by the consuming applications, and apply all of the data processing and analytics required on demand as the data is being accessed. This addresses the latency issues, the inefficiencies associated with data duplication, and the inflexibility of data warehouse data lakes, and data lakehouses. This sets the stage to enable insights on the most current data in source systems and real time data as it flows through the fabric. In addition, by connecting to and processing data from the source, a data fabric architecture solves the quality, consistency, and latency challenges that hinder a bank's ability to improve decision intelligence. Celent has previously covered data fabrics in more detail in Financial Institutions Get Smart About Data (Fabric), April 2021.[3]

A data fabric architecture typically complements existing data management implementations, such as data warehouses, data lakes, and lakehouses. The fabric connects existing data on demand and combines it with data from other internal and external sources to feed decision intelligence systems and models. A data fabric, while supporting both on-premises and cloud data and deployment options, can help support cloud migrations, allowing banks to modernize their data architecture without disrupting current systems or plans. Data fabric approaches offer a way to leverage existing data investments to create a truly user-friendly, enterprise-ready, and adaptable solution.

The Role of Data Fabric in Decision Intelligence

An intelligent decisioning platform serves as a fully connected rules engine that enhances decision-making processes through a process-centric workflow. By integrating advanced AI and machine learning capabilities alongside optimization techniques, this platform not only streamlines banking operations and processes, but also ensures that decisions are made with precision and efficiency. Furthermore, it plays a critical role in evaluating, deciding, and governing various decisions, while also auditing their outcomes to maintain accountability and improve future decision-making processes.

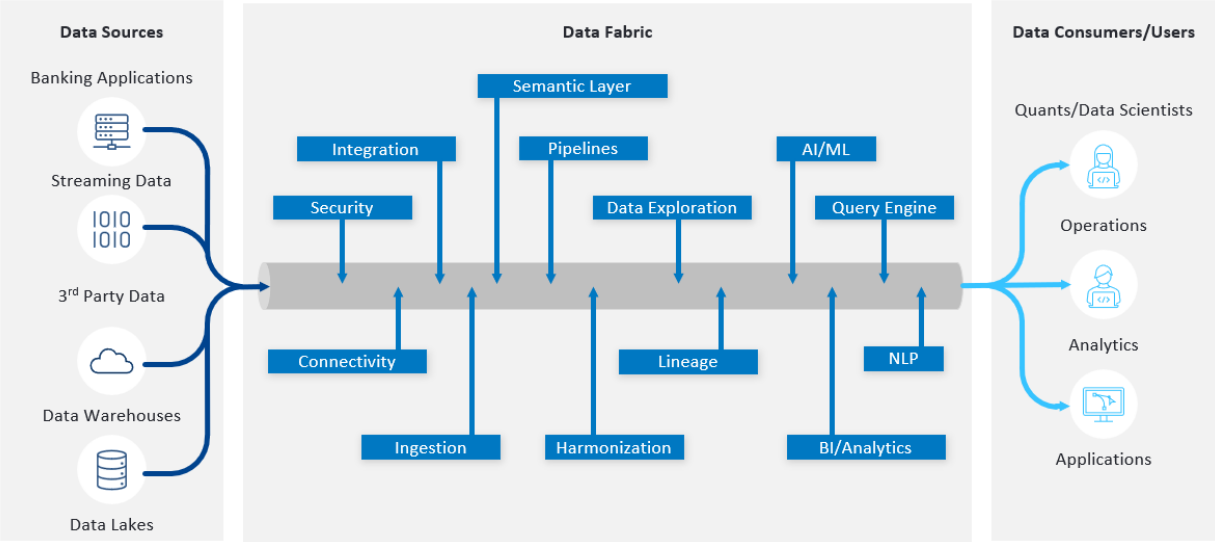
As Celent's survey found, more than half of Tier 1 banks confirm plans to deploy data fabric as a key part of their data strategy, with the expectation that decision intelligence, data quality, and, subsequently, model performance will improve.

Data Fabric Architecture

Managing model performance is a critical and growing activity in financial institutions for optimal operational efficiency, financial performance, compliance, and customer engagement. This is a business requirement that data fabric architecture is designed to meet. The following graphic is a Celent abstraction of a data fabric architecture pattern.

[3] Data Management in Financial Services: Why On-Demand Access to Accurate, Live Data Tops the Agenda InterSystems, 2021

Figure 9: Data Fabric Architecture – Abstract View



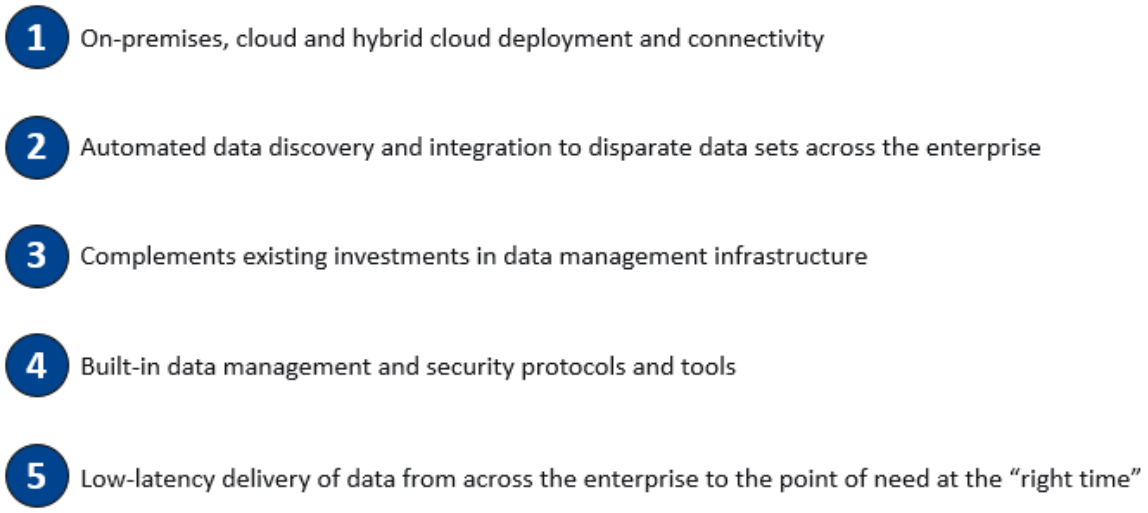
Source: Celent

A data fabric isn't a single technology per se, but a collection of integrated capabilities that include data integration and transformation, along with access and connectivity functions. Whether the source data is in a traditional data warehouse or lakehouse, a document database, or flat files, a data fabric can transform and deliver trusted, integrated, accurate, and current data sets to passive or dynamic processes and models.

The data fabric architecture serves as a framework that weaves together data assets from applications, APIs, data stores, data warehouses/lakes/lakehouses, quantitative analytics, and AI models into a unified system. This architecture is designed to connect and deliver data precisely to the point of need at the right time, ensuring that organizations can make timely and informed decisions. A data fabric should be non-disruptive and complement existing data infrastructure investments by accessing the data stored and managed in these systems and combining with additional data from a myriad of sources—including real time transaction data on demand, as requested by the models. This is especially important as data infrastructure migrates to the cloud and as applications are modernized or replaced. In addition, as mentioned in the Celent report, "Financial Institutions Get Smart About Data (Fabric)," a next generation of so-called smart data fabrics offers a number of features that aim to future-proof data infrastructure and provide a range of analytics capabilities directly within the fabric, eliminating the need to move data to a separate environment.

By improving the performance of critical processes such as credit assessments, payment transactions, and fraud signals, data fabric can enhance operational efficiency and risk management. Furthermore, it maximizes the utilization of enterprise data and AI assets and allows banks to leverage their data resources more effectively. Key aspects of how a data fabric can help improve decision intelligence and model performance in complex operational data environments are highlighted in the following graphic.

Figure 10: Key Features of Data Fabric Architecture in Decision Intelligence



Source: Celent

Conclusion

Banking is essentially an exercise in risk management. Managing risk well hinges on the ability to harness data effectively and make informed decisions rapidly.

The banking industry is undergoing a significant transformation driven by the increasing reliance on data and the need for rapid decision-making. As banks face mounting pressures from real time payments, evolving customer expectations, and sophisticated fraud threats, the importance of decision intelligence has never been more pronounced. This report highlights the critical role that decision intelligence models play in risk management, fraud detection, and customer intelligence. However, model performance remains a problem, and data issues remain a primary contributing factor to decision intelligence model performance issues. To recap, the top three barriers that inhibit model performance and the enhancement of decision intelligence are:

- **Data availability/access to new sources**
- **Data latency/timing**
- **Data quality/consistency**

This is despite the fact that banks have made substantial investments in data management platforms, including data warehouses, data lakes, and lakehouses. A significant portion of surveyed banks expressed concerns regarding the sufficiency and timeliness of data for effective decision-making.

60% of Tier 1 banks cite existing data architectures as a barrier to improving decision intelligence.

Source: Celent Decision Intelligence and Data Survey, 2025

Moreover, this Celent report emphasizes the necessity for ongoing investment in decision intelligence capabilities. The survey results reveal that fraud risk and models associated with real time payment processing are the top priorities for investment in decision intelligence, reflecting the urgent need for banks to bolster their defenses against emerging threats. Additionally, the largest banks are focused on models to improve credit risk management—a constant challenge when the existential market risks are compounded by complex data technology environments. This indicates a pressing need for banks to reassess their data strategies and invest in modern architectures, such as data fabric, to overcome these barriers. As banks navigate this complex environment, leveraging data fabric architectures can provide a pathway to improved data quality and model performance. Such solutions can improve integration of diverse data sources and provide timely access to quality data at the point of need. When implemented correctly, a data fabric complements existing data management investments and is a non-invasive way to deliver data to the point of need, quickly and reliably.

Banks that prioritize data quality, pursue lower data latency, and simplify data acquisition and integration by investing in modern architectures will be well prepared to transform real time risk and decision intelligence capabilities to combat emergent threats, but also capitalize on new business opportunities.

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