Navigating the Future of Data Integration, Accessibility, and AI Challenges in Financial Services

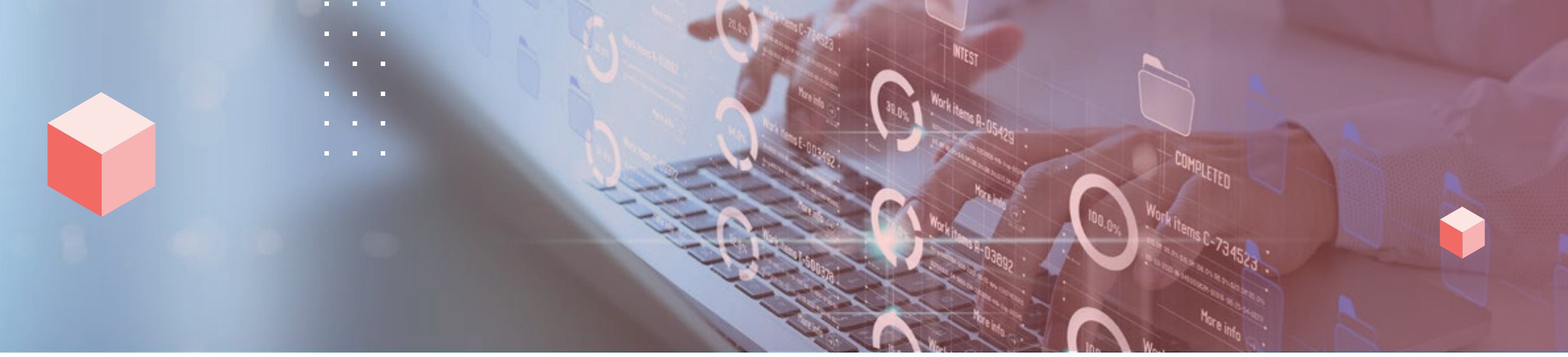
This survey report was commissioned by Denodo

Executive Summary

Data integration, accessibility, and AI implementation present significant challenges for Singapore's leading banks and financial services organizations. This report highlights three critical findings:

- **Data Integration Across Systems and Regions:** Integrating data from multiple platforms and legacy systems remains a top priority, but is hampered by regional regulatory differences, outdated infrastructure, and growing complexities introduced by AI technologies.
- **Speed of Data Access:** Slow data retrieval negatively impacts critical operations like customer engagement, risk management, and fraud detection. Financial institutions struggle to react swiftly to market demands, undermining decision-making and operational efficiency.
- **Data Accessibility and Self-Service:** Many organizations aim to adopt self-service data models, but governance challenges and varying levels of data literacy impede progress. Ensuring that high-quality data is accessible while remaining compliant with regulations like GDPR and PDPA is essential.

AI adoption is a key focus for innovation, but the ability to access and integrate large, high-quality datasets remains a bottleneck. Additionally, hybrid multi-cloud environments present data management challenges related to security, integration, and governance. Despite the clear business benefits of streamlined data platforms, many institutions remain cautious about investing in data management solutions due to the complexity and cost.



Key Findings

DATA INTEGRATION FROM MULTIPLE SYSTEMS AND REGIONS

Data integration remains a significant challenge for most financial services companies, particularly for APAC-based banks with global or regional operations. Integrating data across regions, platforms, and legacy systems is complicated by regulatory differences and the sheer volume of systems involved. Compliance with data protection regulations (GDPR, PDPA) and the technical complexities of decommissioning outdated systems add further obstacles. Emerging technologies such as AI also add complexity without replacing older systems. Companies face hurdles in creating seamless, accessible platforms for unified data utilization and sharing, especially across business units with siloed data.

SPEED OF DATA ACCESS AND ITS IMPACT

For CXOs from companies including investment firms and exchanges, the ability to access data quickly is critical, especially in time-sensitive roles related to customer engagement, fraud detection, and compliance. Delays in accessing relevant data affect decision-making, operational efficiency, and responsiveness to market changes. Companies with slow data access report difficulties in reacting swiftly to business needs, and industry-specific use cases such as risk management or fraud prevention demand near-instantaneous data retrieval. Technical inefficiencies in data processing and system integration lead to reduced productivity and missed opportunities, which impacts both business growth and innovation.

DATA ACCESSIBILITY AND SELF-SERVICE CHALLENGES

Data accessibility remains a key concern for both business and technical users. While many companies encourage self-service models by investing in data catalogs and marketplaces, challenges persist. These include ensuring that all stakeholders have access to relevant, high-quality data and addressing the different levels of data literacy among business and technical teams. Metadata definitions, governance policies, and the ability to use a self-service model effectively across departments vary greatly. As a result, companies struggle to democratize data access in ways that ensure compliance with data protection standards and internal governance policies.

REGULATORY IMPACT ON DATA GOVERNANCE

Regulatory compliance strongly influences the data governance framework of financial services companies. Adapting to local, national, and international regulations while ensuring data governance is sufficient for both business and technical purposes is a continuing challenge. Governance frameworks need to be both agile and robust, balancing the needs of various business units like risk, fraud, and customer engagement. Additionally, the evolving landscape of regulations such as GDPR and sector-specific obligations require companies to consistently update their data governance practices to stay compliant and competitive.

HYBRID MULTI-CLOUD DATA DISTRIBUTION AND CHALLENGES

Most companies are moving towards hybrid multi-cloud environments to manage large volumes of data distributed across multiple platforms. While this offers flexibility, the challenges associated with managing, integrating, and consuming data in such an environment are considerable. Companies struggle to maintain seamless integration between cloud providers and on-premise data centers, with issues such as data consistency, security, and cost efficiency presenting major hurdles. The increased complexity of multi-cloud management also results in governance, access control, and performance issues.

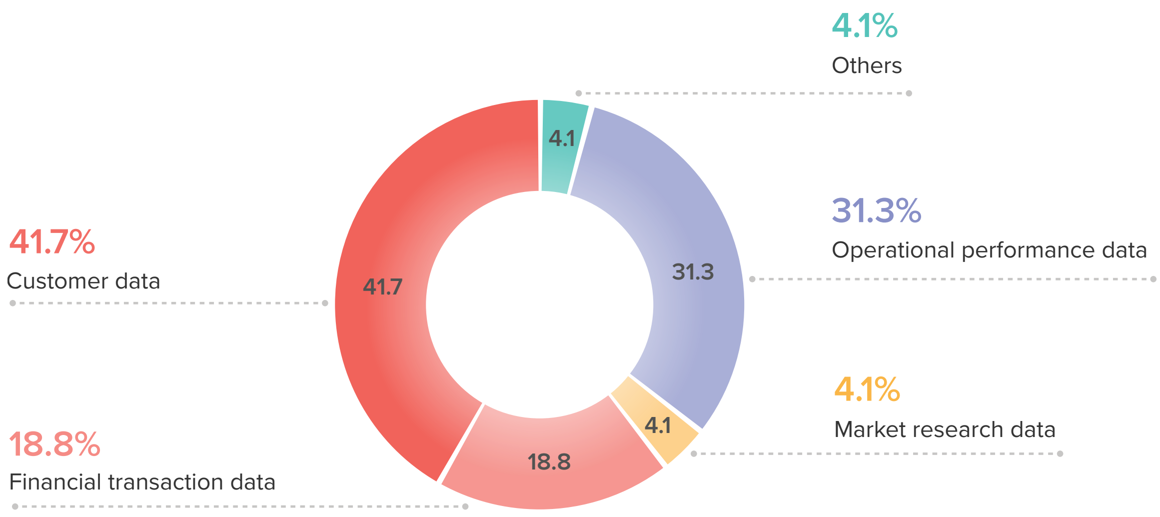
AI-DRIVEN DATA DEMAND AND CHALLENGES

AI adoption is a growing priority, with many organizations recognizing its potential for transforming operations. However, training AI models requires vast amounts of high-quality data, and many companies face difficulties in acquiring or accessing the necessary datasets. The challenges stem from a combination of siloed systems, regulatory constraints, and the inability to scale data infrastructure quickly enough to meet the growing demand from AI initiatives. While AI is often a top priority for innovation, the lack of adequate training data hinders progress, limiting the company's ability to fully leverage AI.

Key Stats

1.CUSTOMER DATA IS THE TOP BUSINESS PRIORITY:

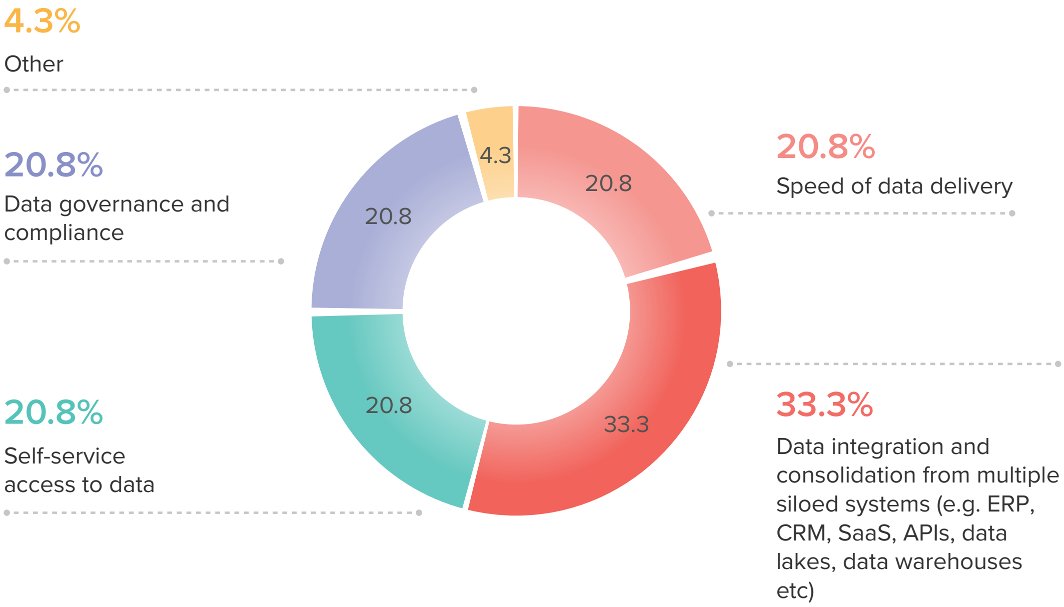
What type of data do financial service leaders work with most frequently?



41.7% of executives identified customer data as their main focus, underscoring the importance of customer-centric strategies in driving business growth.

2.DATA INTEGRATION AND CONSOLIDATION AS THE BIGGEST DATA MANAGEMENT CHALLENGE:

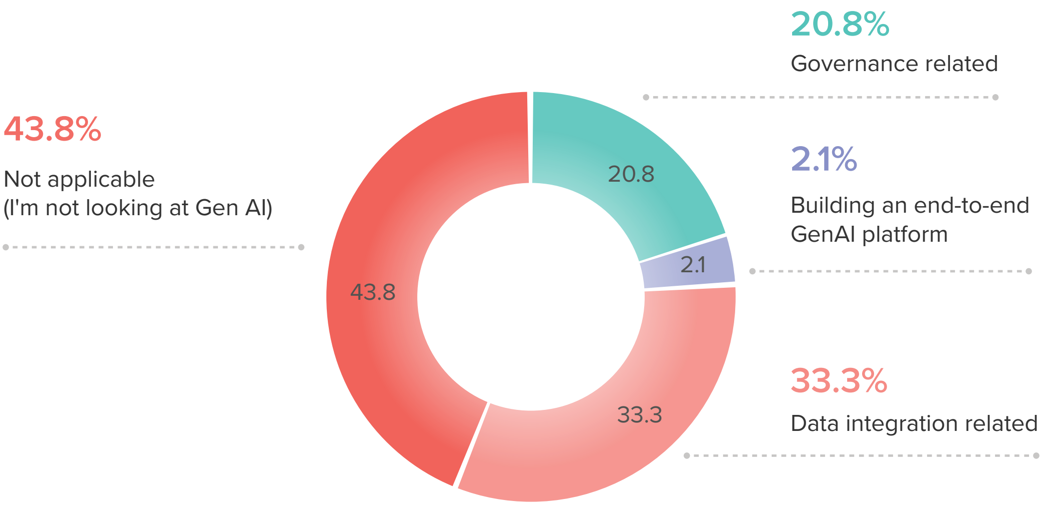
Which area of data management do leaders struggle with the most?



33.3% of respondents reported struggles with integrating data across multiple systems, highlighting the need for solutions that unify siloed data and improve data accessibility.

3.OBSTACLES TO GENAI APPLICATION DEVELOPMENT:

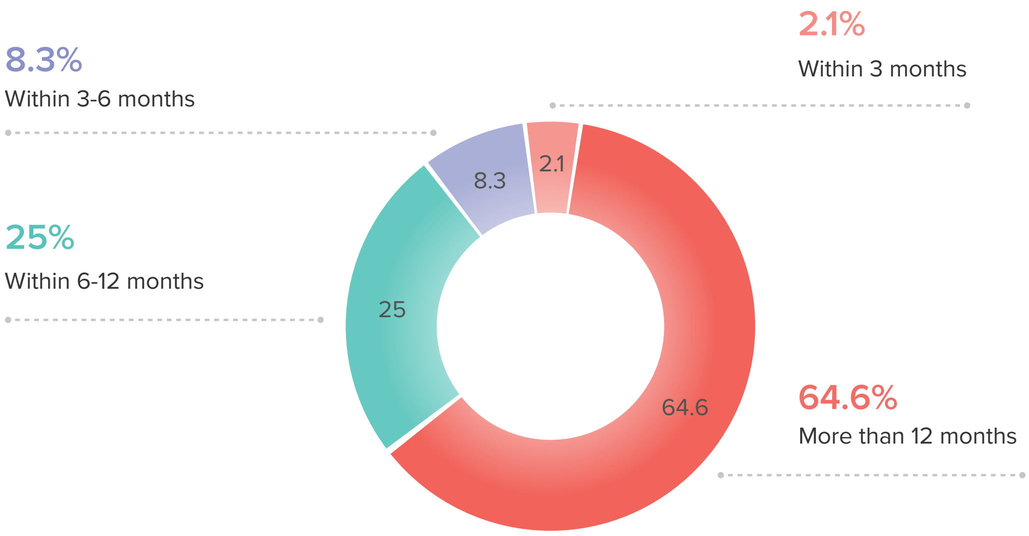
What are the main data related challenges in building Gen AI applications?



Close to 21% of executives highlighted challenges related to data governance, specifically in ensuring timely access to compliant and well-governed data. This demonstrates the critical impact of governance frameworks on maintaining data quality, accessibility, and alignment with regulatory requirements, which directly affect business performance.

4.LONG TIMELINES FOR DATA PLATFORM IMPLEMENTATION:

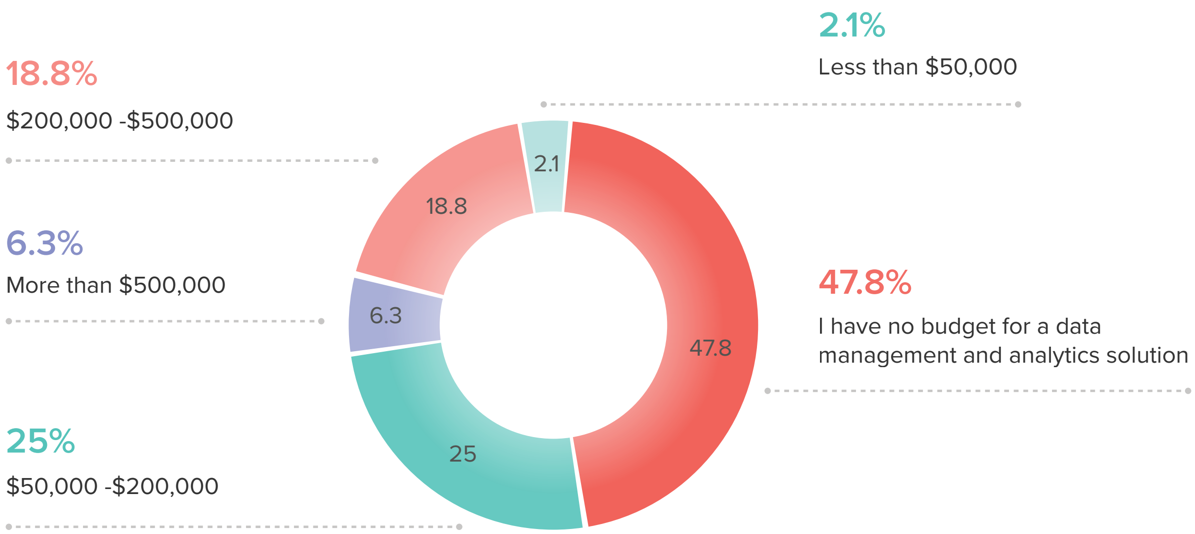
What does a general timeline look like for implementing a new data platform?



64.6% of organizations anticipate needing over 12 months to implement new data platforms, reflecting the complexity of deploying large-scale data infrastructure in financial services.

5.LIMITED INVESTMENT IN DATA MANAGEMENT SOLUTIONS:

How much budget are financial services leaders in Singapore allocating for data management and analytics solutions?



47.8% of respondents reported no budget for data management, while only 18.8% plan to invest between $200,000 to $500,000, signaling that many companies are cautious about spending in this area despite the challenges.

Investment Priorities for 2025:

DATA INTEGRATION SOLUTIONS

Investment Priority:
Develop robust data integration platforms that can handle siloed systems, legacy infrastructures, and multi-region data consolidation.

Why:
The survey reveals that financial institutions are struggling to integrate data from various platforms, including legacy systems and global operations. Offering solutions that simplify data unification, streamline onboarding processes, and comply with complex regulations will address these critical pain points.

AI-READY DATA INFRASTRUCTURE

Investment Priority:
Build AI-enabling tools that facilitate easy access to high-quality training data and scalable AI model development.

Why:
AI adoption is a top priority for many companies, but the lack of training data and difficulty accessing large datasets is a bottleneck. Investments in AI-driven data management platforms, automated data labeling, and scalable data architectures can position vendors as essential partners in accelerating AI initiatives.

SELF-SERVICE DATA PLATFORMS AND MARKETPLACES

Investment Priority:
Develop comprehensive, user-friendly self-service data platforms, including data catalogs and marketplaces with strong governance features.

Why:
The survey shows that many companies are moving toward self-service models, but challenges remain. Vendors that provide intuitive platforms with strong governance controls, metadata management, and accessibility for both technical and non-technical users will help financial institutions democratize data usage, improving decision-making and compliance.

HYBRID MULTI-CLOUD DATA MANAGEMENT SOLUTIONS

Investment Priority:
Invest in solutions that simplify data management across hybrid multi-cloud environments, ensuring consistency, security, and integration.

Why:
Many companies operate in multi-cloud environments, creating challenges in integrating and managing data across platforms. Tools that offer seamless data movement, unified governance, and security across cloud providers and on-premise systems will be crucial as financial institutions increasingly adopt cloud strategies.

DATA GOVERNANCE AND COMPLIANCE AUTOMATION TOOLS

Investment Priority:
Focus on creating automated governance solutions that ensure compliance with complex, evolving regulations like GDPR, PDPA, and industry-specific mandates.

Why:
With regulatory obligations driving data governance requirements, financial services companies need flexible, scalable governance frameworks that adapt to changing regulations. Automated compliance tools can reduce the risk of non-compliance and ensure that both business and technical users have access to the right data without compromising security.

HIGH-SPEED DATA ACCESS AND PROCESSING TOOLS

Investment Priority:
Invest in technologies that enable fast, real-time data access for time-sensitive applications like risk management, fraud detection, and customer engagement.

Why:
Slow data access is a significant issue affecting decision-making and operational efficiency. Vendors providing high-performance, low-latency data platforms, in-memory processing, or edge computing solutions will meet the growing demand for faster, more reliable data access in these critical applications.

DATA MIGRATION AND M&A INTEGRATION SERVICES

Investment Priority:
Offer specialized services and tools for smooth data migration, particularly during mergers and acquisitions (M&A), which involve complex legacy data integration.

Why:
Companies undergoing M&A face data migration hurdles from disparate systems. Investment in reliable data migration tools and services that ensure accurate, efficient data transfers and integration will be highly valuable to financial institutions undergoing consolidation.

SECURITY-ENHANCED DATA INTEGRATION SOLUTIONS

Investment Priority:
Ensure that data integration solutions come with enhanced security protocols and compliance features, specifically for handling sensitive data.

Why:
Ensuring security during data integration is critical with sensitive data, information at the core of financial services. Solutions with built-in compliance checks, data encryption like TLS, and secure protocols will address the dual need for security and regulatory adherence.

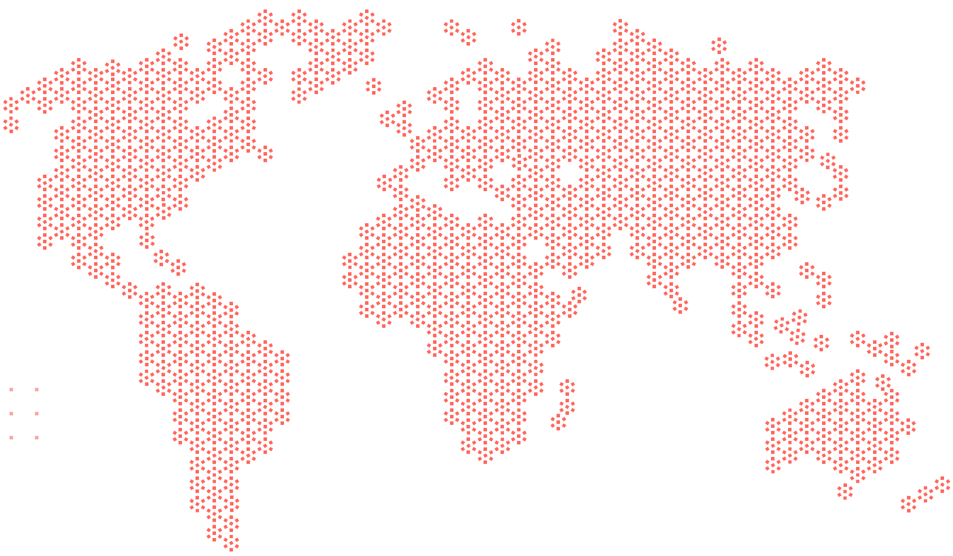
Methodology

The findings in this report are derived from a combination of in-depth interviews and surveys with senior executives at tier-one banks based in Singapore and financial institutions. We conducted interviews with 10 executives, including Chief Information Officers (CIOs), Chief Technology Officers (CTOs), and Chief Data Officers (CDOs), focusing on their operational and strategic challenges regarding data integration and AI. The insights were supplemented with quantitative survey data collected from 50 executives across the financial services sector in Singapore. The interviews explored specific issues related to regulatory compliance, data accessibility, and AI infrastructure, while the surveys helped identify broader trends and investment priorities. All data were anonymized and aggregated to ensure the confidentiality of the respondents.

Conclusion

This report highlights key challenges financial services companies face in managing data integration, accessibility, and governance, particularly in the context of growing AI demands and complex regulatory environments. Based on survey and interview insights from 60 CXOs, the report explores the ongoing difficulties in unifying siloed systems, ensuring compliance, and meeting the increasing demand for high-quality data. It provides a comprehensive look at how financial services organizations are navigating the complexities of multi-cloud environments, self-service data initiatives, and the evolving role of AI in data management. There is strong focus on customer-centric initiatives, alongside significant hurdles in data integration, timely data access, and investment constraints in implementing robust data management platforms.

Key investment priorities for financial services firms evaluating data management solutions should revolve around simplifeddata integration, accelerating AI readiness, secure and compliant multi-cloud solutions, and enhanced accessibility and governance of data across all business units.



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