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Achieving Data Excellence in Financial Information Management

A Guide to Driving Real Business and Customer Value for Financial Data Leaders

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A Guide to Driving Real Business and Customer Value for Financial Data Leaders

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Executive Summary

Financial institutions have accumulated large quantities of valuable data and metadata, but the levels of maturity in terms of how they utilize that data differ from one organization to another. For many organizations, data still resides in different data stores within the enterprise—discovering, consolidating, and integrating that data in a way that increases its relative value remains a challenge.

To truly achieve their data management goals, these companies need applications that solve real business problems; drive business benefits; support innovative, value-added, customer-facing applications; and continuously optimize internal operations. The maturity with which they integrate data and metadata will determine their success in these areas.

Applications for AI and machine learning are emerging to help them develop automated, proactive solutions such as fraud identification applications, data visualization solutions for customers, compliance

safeguards, and others. The goal for financial institutions is therefore to manage their data and metadata so they can apply it in an optimized way across any number of applications that drive business value—now and in the future.

But while some are only beginning their journey towards data maturity, industry leaders are blazing trails in terms of practical data solutions.

This report explores recent trends and winning strategies that demonstrate how financial institutions can get the greatest value from their enterprise data. With a focus on connecting data and metadata across the enterprise, the report demonstrates how financial institutions can build this foundation. Also featured here are qualitative insights from leading data practitioners about the strategies and initiatives driving their ongoing success.
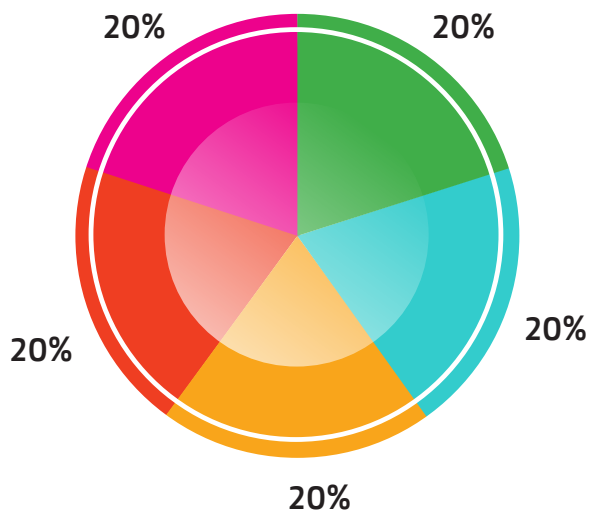
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About the Respondents

The WBR Insights research team surveyed 100 leaders from financial organizations to generate the results featured in this study.

For which type of company do you work?

- 20%
- 20%
- 20%
- 20%
- 20%

Legend:
- Asset Management
- Financial Services
- Hedge Fund
- Investment Bank
- Insurance

In each case, 20% of the respondents are from financial services companies, asset management companies, hedge funds, investment banks, and insurance companies.

What is your company's annnual revenue?

34%	33%	33%
$100 million – $500 million	$500 million – $1 billion	More than $1 billion
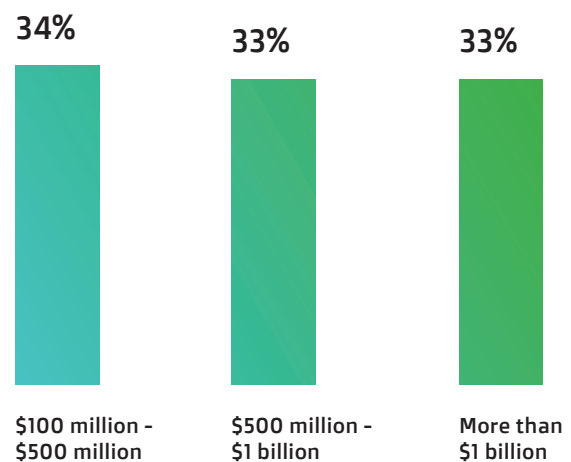
In each case, about one-third of the respondents are from large companies that make more than $1 billion in annual revenue (33%) or from mid-sized companies that make $500 million to $1 billion in annual revenue. The remaining 34% are from smaller organizations that make $100 million to $500 million in annual revenue.

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About the Respondents

What is your seniority?

31% 23%

16%

30%
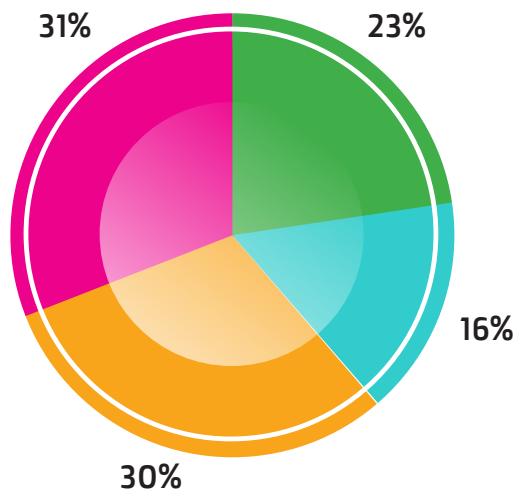
- 🟩 C- Suite
- 🟧 Department Head
- 🟦 Vice President
- 🟥 Director

What is your role?

22% 30%

20%

28%

- 🟩 Analytics
- 🟧 Information
- 🟦 Data
- 🟥 IT

Most of the respondents are directors (31%) and department heads (30%). The remaining respondents are C-suite executives (23%) and vice presidents (16%).

The respondents occupy roles in analytics (30%), data (28%), IT (22%), and financial information (20%).

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Key Insights

Among the respondents:

Most consider their company's level of data management sophistication to be "exceptional" (17%) or "good" (52%).

Most (55%) claim their organizations' data quality standards have become more robust in the last 12 months as they keep up with their industries as well.

The top-three business benefits they intend to accomplish with data management are more effective data integrations with partners (52%), easier compliance (52%), and reduced costs (49%).

28% claim they are already using AI and/or ML to build predictive models and boost productivity, while 56% claim they are leveraging AI and/or ML to automate most applicable solutions.

52% claim their organizations' current applications already deliver excellent results in cloud data management. Meanwhile, 49% claim their current applications already deliver excellent results in data analytics, reporting, and visualization.

51% will have 51% to 75% of their data management hosted in the cloud in the next one to three years. Most (87%) will host at least 76% of their operations in the cloud in over three years, including 31% who expect to host 100% of their operations in the cloud.

The top-three primary challenges to their data management initiatives are rapid data growth or expansion (62%), difficulties finding data across dissimilar data stores or silos (54%), and data complexity (41%).

Data Management Strategies for Complex Data

Financial services firms deal with many forms of information and have done so for a long time. But new business needs can often outstrip what the current application portfolio can provide.

A frustrating situation arises where the relevant information is out there – somewhere – but it's either not in a useful format, nor easily connected with other pieces of information.

This is particularly true when it comes to customer information. Essential information can be locked away in multiple, incompatible legacy systems. Important customers see elongated response times and associated frustration. Costs and effort escalate. Compliance and reporting risks increase.

What appears to be a tactical challenge is a strategic issue: *relevant information can't be easily leveraged to create value*.

It's not hard to make the case that something better is needed, but what?

One attractive approach is to construct a unified customer information platform that makes it easy to create any new "lens" required and do so across any data source as needed.

When IT departments attempt to build such a platform, however, they almost always find:

- Trying to use existing data management tools – more oriented to simpler forms of data – produces unworkable results.

- Integrating multiple, specialized data management tools results in elongated development efforts that delay business results.

By choosing a data management platform well-suited to the task at hand, many financial services firms have seen dramatic and accelerated business results.

Complex Data is Different

A quick survey of failed projects reveals a common denominator: they used the wrong tool for the job at hand. Refining and connecting complex data is fundamentally different than working with simpler forms of data.

Tools designed for simpler data types (tabular rows and columns, well-formed XML and JSON, etc.) are not built to work well with complex data types – often documents and forms – that are often found in financial services environments.

Complexity may arise from the data itself, a vast array of different data types, or a combination of both.

Complex data is ideally handled differently than simpler forms of data. Metadata is generated to connect information elements and create new, useful views of key business concepts and entities without changing the underlying sourced data.

From powerful search to SQL queries to semantic models with rich ontologies, successful organizations will invest in continually improving the quality and connectivity of their metadata using a variety of tools.

These refined, connected data models can be directly accessed using an end user query language, or exposed for easy access by developers.

The Benefits

A review of case studies where organizations have created a unified customer information platform shows a related group of benefits – which we collectively call data agility.

- Sub-second responses for frequent queries.

- Dramatically improved query results: more accurate, fewer misses, and better context

- Reduced developer backlog for new requirements.

- Improved security posture with simpler compliance reporting.

- Improved ability to create newer applications that easily use all available information.

- Bringing new insights to analytical and machine learning efforts.

Where MarkLogic Fits

Progress® MarkLogic® is the best platform for creating value from complex data. Our value proposition: we accelerate every step of the journey.

- Sourcing data from anywhere, in any format, and making it immediately usable.

- Providing a powerful framework for data mastering and modeling.

- Providing a unified data API for developers from their choice of environment.

- Delivering an enterprise-grade environment: security, scalability, availability, recoverability and cloud readiness as needed.

We invite you to learn more about what makes MarkLogic uniquely suited to this challenge, and why so many financial institutions depend on us for this critical portion of their business.

For more information, visit our Financial Services industry solutions site.
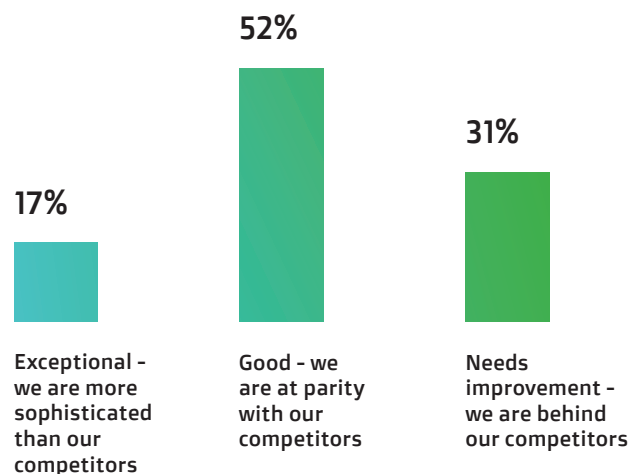
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Financial Organizations Are Approaching High Levels of Data Maturity

Financial institutions like investment banks, hedge funds, and insurance companies are now reliant upon data in multiple forms, including customer data and Big Data. The digitization of the finance industry has paved the way for the deployment of innovative technologies like artificial intelligence (AI), machine learning (ML), and analytics. These technologies are dramatically changing the way these companies and their customers are interacting with wealth, and they are generating immense opportunities for efficiency, risk avoidance, and streamlined decision-making.

According to an analytics leader from a hedge fund who responded to the survey, "Analysis of internal data sets and external market data, and the collating of critical market metrics, are important to increase the value for our business and clients."

Still, not every financial organization has reached a level of data maturity necessary to deploy analysis at scale. Data is often difficult to reach or analyze due to mismatched data standards, silos, and concurrent data operations running in different sectors of the business.

How would you rate your company's level of sophistication in terms of data management?

52%

31%

17%

Exceptional - we are more sophisticated than our competitors

Good - we are at parity with our competitors

Needs improvement - we are behind our competitors

Effective data management holds promise to remove these barriers and unlock the true power of the organization's data. Using an effective data governance framework, financial organizations can not only leverage AI for their operations but also apply it to their data management initiatives, dramatically expanding their analysis and modeling capabilities.

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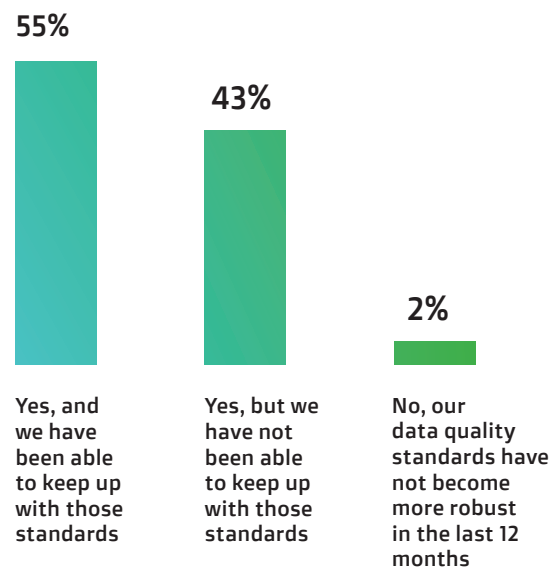## Financial Organizations Are Approaching High Levels of Data Maturity

According to the results of this study, many financial organizations are currently satisfied with their level of data maturity. For example, 52% of the respondents rate their company's level of data management sophistication as "good." These companies are at parity with their competitors.

Another 17% rate their company's level of data management sophistication as "exceptional." These organizations are more sophisticated than their competitors, giving them a leading edge in the market.

Moving forward, it is financial organizations with the most sophisticated data operations and capabilities that will be able to win business over others. For example, investment customers are more interested than ever in AI's capabilities in the finance industry, and companies are responding. According to *Forbes*, "Customer and stakeholder satisfaction is the most important key metric for measuring an AI strategy's success in Financial Services today."[1]

Of course, data management sophistication can only be achieved with high data quality standards. Data that has been cleaned and has the requisite meta information can be leveraged by the organization's data solutions. Data that isn't standardized or is otherwise incompatible represents a wasted opportunity.

Have your organization's data quality standards become more robust in the last 12 months, and have you been able to keep up with industry standards?

55%

43%

2%

Yes, and we have been able to keep up with those standards

Yes, but we have not been able to keep up with those standards

No, our data quality standards have not become more robust in the last 12 months

Currently, 55% of the respondents have been able to keep up with industry standards of data management. Although this represents a majority of the respondents, significant portions have either not been able to keep up with industry data standards (43%) or feel that their data quality standards have not become at all more robust in the past 12 months (2%).
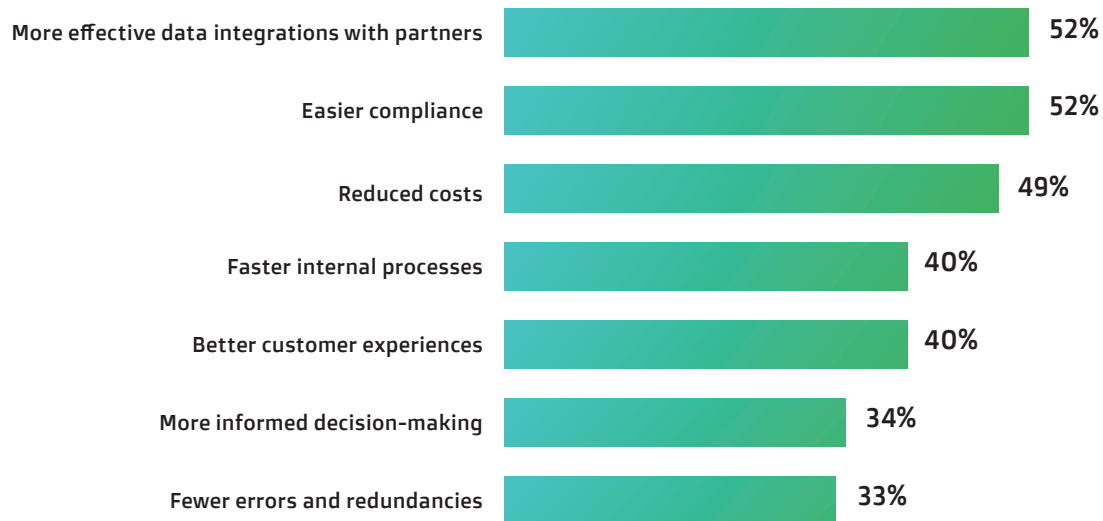
[1] Columbus, Louis. "The State of AI Adoption in Financial Services." Forbes. Oct. 31, 2020.

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Financial Organizations Are Approaching High Levels of Data Maturity

Financial data standards aren't just good for business. They are an important step in supporting investors. They provide investors with decision-making capabilities that help them make accurate and informed decisions regarding their wealth. For the organization, high data standards enable analysts to fully leverage the company's data for insights and efficiencies—benefits that can be passed on to customers or investors.

Among the options available, which are business benefits you intend to accomplish with your data management initiatives?

More effective data integrations with partners	52%
Easier compliance	52%
Reduced costs	49%
Faster internal processes	40%
Better customer experiences	40%
More informed decision-making	34%
Fewer errors and redundancies	33%

There are other benefits to high data standards and effective data management in the finance industry. The top three business benefits of the respondents' data management initiatives include more effective data integrations with partners (52%), easier compliance (52%), and reduced costs (49%). Other respondents believe faster internal processes (40%) and better customer experiences (40%) are also important benefits.

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AI and ML Prove Effective for Automation, with More Opportunities Ahead

Advancements in AI over the past decade have unlocked numerous opportunities for financial institutions, banks, and insurance companies. Today's AI solutions empower financial organizations with unparalleled efficiency and analytical capabilities. As we've noted, it also unlocks new opportunities to improve the customer experience, as companies using AI and robust data capabilities can provide customers with more accurate insights and up-to-the-minute suggestions.

"Data will play a big role in improving the client experience," says a department head at a large investment bank. "Analytics provides valuable insights, and we want to harness these capabilities in the next 12 months."

At a total of 84%, most of the respondents are already leveraging AI and/or ML to automate most of their applicable solutions (56%) or they are using the technologies in an advanced capacity—they are leveraging AI and/or ML to build predictive models and boost productivity (28%).

This represents a significant increase in adoption compared to reports from previous years. For example, the *Forbes* article previously cited in this report revealed that just 54% of financial services organizations with more than 5,000 employees had adopted AI in 2020.

To what extent are AI and machine learning (ML) automating proactive solutions for your organization?

28% — We are using AI and/or ML to build predictive models and boost productivity

56% — We are leveraging AI and/or ML to automate most of our applicable solutions

16% — We are leveraging AI and/or ML to automate only a few of our applicable solutions
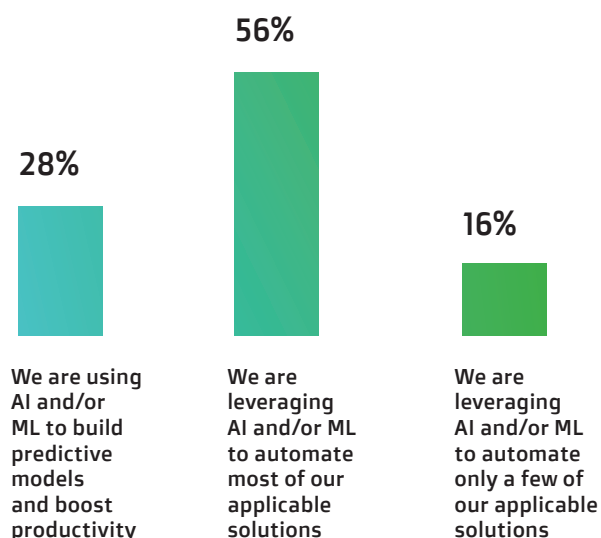
AI and ML Prove Effective for Automation, with More Opportunities Ahead

How successfully are your current applications driving value for your business within each of the following categories?

■ High value - our current applications deliver excellent results

■ Moderate value - our current applications deliver results, but need improvement

■ Low value - our current applications don't deliver the results we need

	High value	Moderate value	Low value
Cloud data management	52%	45%	3%
Data analytics, reporting, and visualization	49%	37%	14%
Risk and compliance	43%	43%	14%
Data modeling and governance	43%	34%	23%
Data integration	42%	33%	25%
Data search and semantic tools	35%	41%	24%
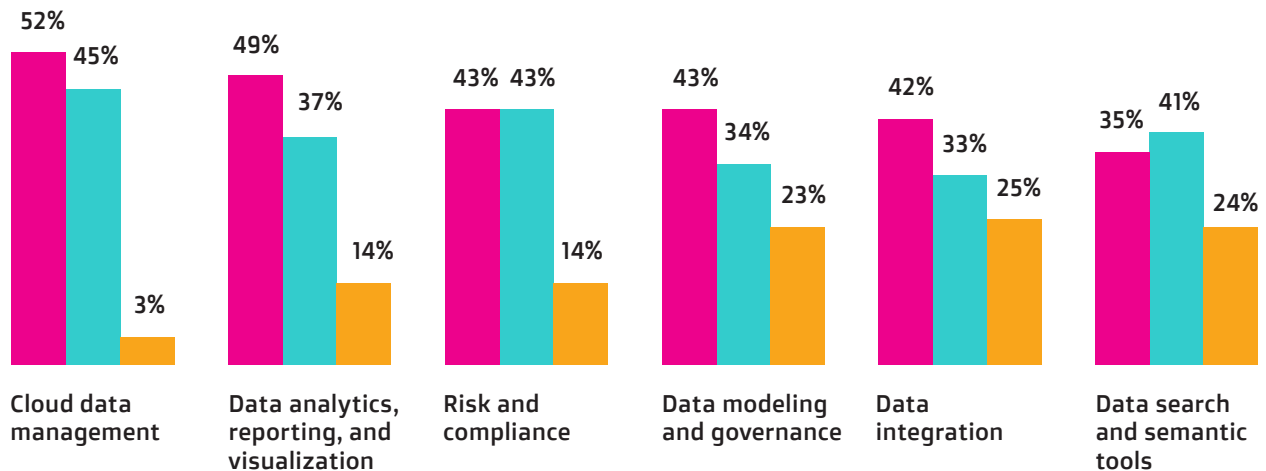
Nonetheless, when researchers asked about specifics regarding these organizations' applications, some opportunities emerged. Although 52% of the respondents say their current applications deliver excellent results in terms of cloud data management, this is the only capability for which a majority of the respondents say their applications are proving highly valuable. Less than half of the respondents are getting high value when it comes to data analytics (49%), risk and compliance (43%), data modeling and governance (43%), and data integration (42%).

Significantly, most respondents are only getting moderate value (41%) or low value (24%) from their applications for data search and semantic tools. Semantic search (search with "meaning") can be contrasted with lexical search, which means searching for literal matches to queries. Although lexical searches have been standard in the past, semantic searches hold promise to make data search much more streamlined and intuitive.

Using AI, financial organizations can pour over their data by searching for meanings

AI and ML Prove Effective for Automation, with More Opportunities Ahead

rather than literal words or numbers. Semantic AI tools can understand the query itself, rather than simply finding literal matches to queries. Most search engines are currently capable of this, comparing search inputs to data about the searcher and providing results based on the intent of the search query and the individual's history rather than literal results from the query provided.

Companies that can leverage this capability could unlock more opportunities to clean and standardize their data, and it could make searching for insights much easier. Similarly, AI-powered data modeling and governance, risk compliance, and analytics tools have the potential to make both data standardization and analysis an afterthought.

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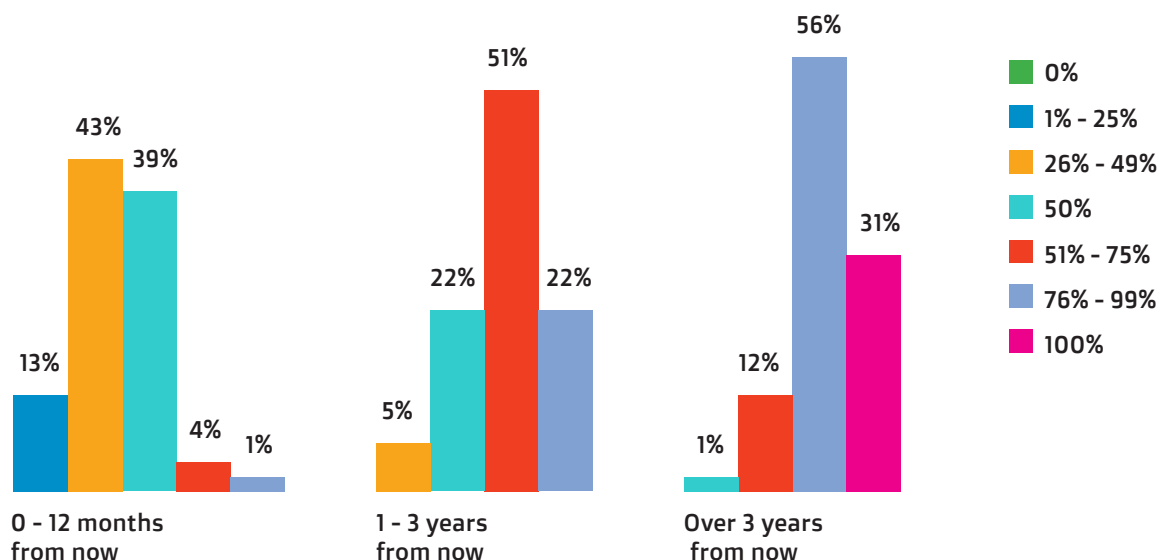# Data Operations Will Migrate to the Cloud in the Next Three Years

Cloud migration is still an important step for many organizations. And while most companies are now leveraging cloud-based tools in some capacity, not every organization is currently leveraging cloud capabilities for their data management initiatives.

Historically, financial institutions have lagged behind other types of companies in their adoption of cloud services, especially for data analysis. This is due, in part, to the tight regulations that guard the industry. In the past, cloud-based processes were often viewed with skepticism as sending data over

the internet to be processed remotely seemed like a risky endeavor, especially for sensitive and tightly regulated consumer data.

But customers are now demanding more of financial institutions, and several in-demand capabilities can only be leveraged through cloud-based data management. Further, there is mounting evidence that cloud-based processes are not only safe but also highly effective when the organization needs to scale its computing powers. Instead of bringing in more computing power on-site, the company can simply enlist more resources from its cloud services provider.

As part of your current formal data management plan, what percentage of your data management will your organization host in the cloud, and when?

Legend	
0%	
1% – 25%	
26% – 49%	
50%	
51% – 75%	
76% – 99%	
100%	

0 – 12 months from now: 13%, 43%, 39%, 4%, 1%

1 – 3 years from now: 5%, 22%, 51%, 22%

Over 3 years from now: 1%, 12%, 56%, 31%

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Data Operations Will Migrate to the Cloud in the Next Three Years

The results of this study indicate that financial institutions are moving their data management operations to the cloud to prepare for the future. In one to three years, 51% of the respondents expect to host 51% to 75% of their data management in the cloud. In over three years, 87% of the respondents expect to host at least 76% of their data management operations in the cloud. This includes 31% who expect to host 100% of their operations in the cloud.

Cloud-based data services are also more appealing than ever for financial institutions because they are more affordable. Using a fully managed cloud data hub, companies can run transactional and analytical applications at scale. The technology is also more accessible to low-code and no-code users than in previous years, as many service providers enable clients to connect to their cloud applications through an intuitive SaaS interface.

These types of capabilities will enable reluctant financial organizations to reach their formal data management goals and drive business value through more efficient cloud-based processes.

"Our formal goal is to drive cloud analytics and reduce the load on internal storage measure," says a director of analytics at a financial services firm.

Similarly, a C-suite data executive at an investment bank says "developing more speed with cloud capabilities" is their organization's primary goal in the next 12 months.
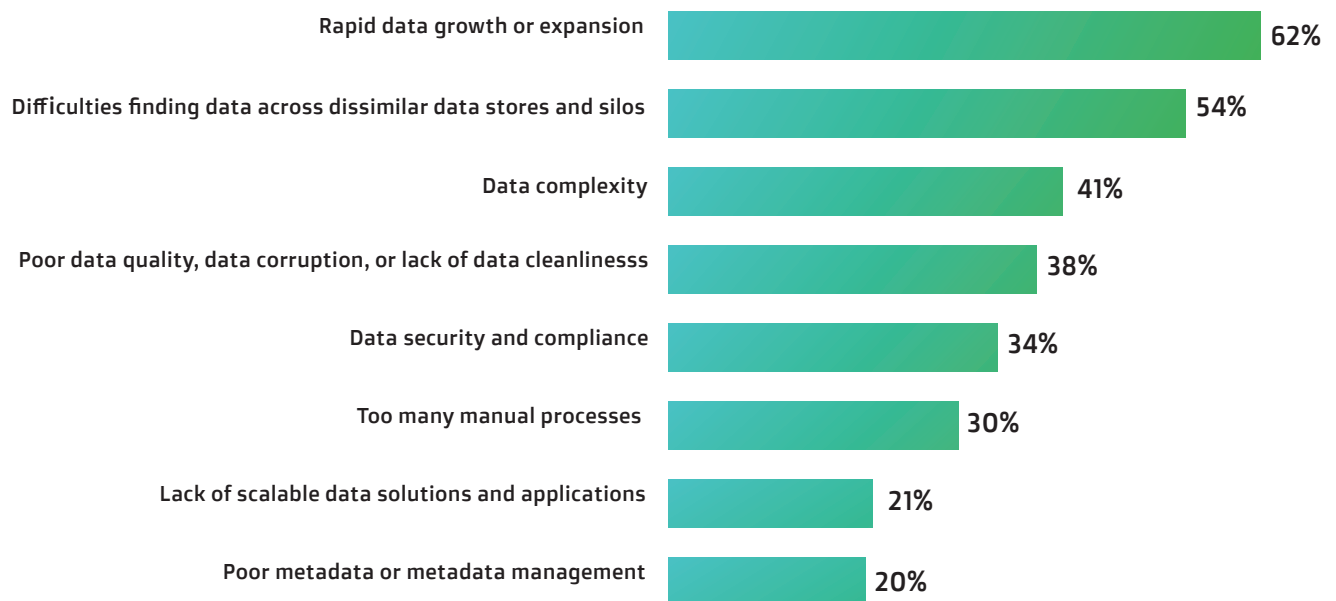
Multiple other respondents say, "cloud computing," "cloud analytics," and "cloud management" are part of their formal goals in the next 12 months.

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Data Operations Will Migrate to the Cloud in the Next Three Years

Among the options available, which do you consider primary challenges to the data management initiatives you just described?

Challenge	%
Rapid data growth or expansion	62%
Difficulties finding data across dissimilar data stores and silos	54%
Data complexity	41%
Poor data quality, data corruption, or lack of data cleanlinesss	38%
Data security and compliance	34%
Too many manual processes	30%
Lack of scalable data solutions and applications	21%
Poor metadata or metadata management	20%

But challenges and barriers still lie between many financial organizations and their data management goals.

For example, 62% of the respondents say rapid data growth or expansion is one of the key challenges to their data management initiatives. Financial organizations now generate massive amounts of data each day, all of which must be sorted and analyzed appropriately. It can be challenging to make high-level changes—such as migrating operations to the cloud—while still operating analytical capabilities at full capacity.

Meanwhile, 54% of the respondents say finding data across silos and dissimilar data stores is a top challenge. Many organizations may need to revisit their data governance standards to ensure data can be leveraged properly by everyone in the organization. Data democratization is one endeavor that could make data more accessible to everyone in the business, and it could relieve some of the issues with silos.

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Conclusion: All in on AI

In their final line of questioning, researchers asked the respondents to describe the data management opportunity in the industry that most excites them. While not every organization is on the precipice of adopting the most cutting-edge data technologies, there are still plenty of advancements to consider for the next few years.

Several respondents note that artificial intelligence, "continues to dominate most of the data management trends," as one C-suite executive from a hedge fund puts it.

"A holistic approach towards AI will be targeted by a list of organizations now and in the future because of the platform that it will create from a data management point of view," says another C-suite executive, this time from an insurance organization.

Other respondents are most excited about predictive capabilities—which use AI and ML—more specifically. Predictive analytics and predictive risk assessments can provide both customers and the organization with real-time insights, enabling them to make more accurate decisions faster.

"Predictive analytics is a futuristic trend that will literally change the way we operate in our industry," says an IT director at an insurance company.

A director of analytics at another insurance company says that "risk management optimization will increase the revenue" for the industry, serving both organizations and their customers.

Other respondents note that customer-related technologies could serve as a significant advantage for their organizations. For example, an IT director at an investment bank says, "Customer journey analysis is the next big thing and digitized data management will provide predictability in this process."

Although the respondents are focused on different types of benefits from the technology, it's clear that cloud-based data analytics combined with AI solutions will be the key drivers of the financial industry's data strategy in the coming years. Most organizations have already achieved a healthy level of data maturity, and they are working to take advantage of new opportunities to reduce risk, increase revenue, and improve the customer experience.

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Key Suggestions

- Begin migrating your data management capabilities to the cloud, as most financial organizations plan to do so in the next three years. Cloud-based data management service providers can make this process more affordable and easier to manage, and it has the potential to unlock new capabilities for your organization and your customers.

- If you are still struggling with siloed and unusable data, revisit your data governance standards and benchmark them against industry standards. A significant portion of respondents have made their data quality standards more robust in recent years, but they aren't keeping up with industry standards.

- Leverage AI and ML to automate as many applicable solutions as possible. Once you've achieved a high level of data maturity, you can leverage these tools to build predictive models and boost productivity even more.

- If you need to make major changes to your data management operation, dedicate specific internal resources to doing so. Rapid data growth and expansion is the top challenge to organizations' data management initiatives in the study.

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About Our
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The Progress MarkLogic Data Hub is a highly differentiated data platform that eliminates friction at every step of the data integration process. Built on MarkLogic Server, a multi-model database, our Data Hub Platform breaks down data silos by ingesting data as is from any source, indexing it immediately for query and search, and providing the ability to run operational and analytical applications at scale. This ensures a consistent, real-time view of enterprise data – all in one unified platform that runs in any environment.

By simplifying data integration, MarkLogic helps organizations gain agility, lower IT costs, and safely share their data.

For more information, please visit www.progress.com/marklogic

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About
The Authors

fima USA | **Financial Data Innovation**

Financial Information Management (FIMA) launched in 2005 and is the leading data management event for financial services in the United States. Born as a reference data management event, FIMA has quickly grown to cover so much more as different kinds of data are creating new risks to manage and opportunities to capitalize on. Each of our events hosts more than 425 guests from more than 145 companies with three days of content and 12 hours of networking. Each year FIMA-hosted sessions and discussions are led by top data management professionals, all covering topics that are of fundamental importance to your enterprise-wide data management initiatives. We're dedicated to helping you make an ever-increasing impact on your business, year after year.

For more information, please visit www.fimaus.wbresearch.com

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