

# Data Interoperability's Importance in the Financial Services Industry

*How data interoperability is becoming increasingly essential in today's financial services marketplace*

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## Executive Summary

**F**inancial services are one of the world's largest and most complex industries. It involves numerous stakeholders, including banks, insurance companies, investment firms, and payment processors, who generate and manage large amounts of data. These stakeholders require information from various departments inside the organization, as well as external third-parties parties like exchanges and data vendors. The industry's smooth functioning depends on, for example, the ability of different bank departments to exchange and share data efficiently, which is why data interoperability has become essential.

Data interoperability refers to the ability of different systems, applications, and processes to exchange and use data seamlessly and transparently. It ensures that data

can be shared between companies, systems, and platforms without any loss of information or degradation of quality. Data interoperability in the financial services industry is critical for reducing costs, increasing productivity, and improving the overall customer experience, speed, and performance. Stakeholders require information from multiple sources, whether internal from other departments, customers, or third parties, including exchanges and market data vendors.

This report will examine how data interoperability is critical to the daily functions of the financial services industry, enabling financial institutions to exchange data securely. It will also highlight the need for financial institutions to invest in data interoperability solutions to meet the challenges of the digital age. ■

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## CHAPTER ONE

# Understanding the Benefits of Data Interoperability

## KEY FINDING

*Data interoperability is a critical aspect of modern data management. Companies need to make informed decisions for their business to keep up with an ever-changing digital age*

In addition, it is essential in today's digital marketplace, where organizations collect and manage large amounts of data from different sources.

"Data interoperability is the ability to take information from various sources or places and combine it and use it to make effective decisions," says David Tabit, Managing Director and Global Head of Engineering at Moody's Analytics.

"For example, you might get people data and company data from different sources, combine them using unique identifiers and linkages and be able to answer a question that requires both types of data. That's the interoperability of it," he adds.

Financial institutions must exchange and use data seamlessly and securely to maintain the integrity of that data. This is important not only for technical reasons but also for business reasons. Companies can only benefit from data if it's accurate, providing them with the necessary information to make effective business decisions. ►

*"Data interoperability is the ability to take information from various sources or places, and combine it and use it to make effective decisions."*

**David Tabit**

Managing Director and Global Head of Engineering, Moody's Analytics



### Data Interoperability Format and Structure Challenges

Data is usually stored in different formats, structures, systems, and frequencies, which creates issues for companies to access and analyze. However, data interoperability enables organizations to gather data from several sources and make it accessible and usable.

One of the critical challenges of data interoperability is dealing with different data formats and structures, mainly when data from one source

is structured while data from another source is unstructured. Different systems use a variety of formats, so it can be difficult to exchange data without manually changing it to fit a standard format. This can increase the cost, time, and effort required to achieve interoperability and could introduce errors into the data.

“Data often lies in siloes in complexly designed applications/platforms and legacy systems,” says Kshitija Joshi, Vice President of Data Science at Nomura.

“This is especially true for companies that have grown by acquisitions where even the internal data is not interoperable. In addition, most multi-product organizations still do not have a customer 360 view based on internal data. Getting in external data is another challenge altogether,” he adds.

Another challenge of data interoperability is interpreting data, which can differ depending on the system or application used. This can be rectified if companies use standard data formats that support interoperability and enable seamless data exchange.

“Having different systems, not having one source of information, or not having the right information determines whether you can even use that data,” explains Nivedh Iyer, Director and Head of Data Governance & Management at Grant Thornton. ►

*“Data often lies in siloes in complexly designed applications/platforms and legacy systems”*

**Kshitija Joshi**

Vice President of Data Science, Nomura

### Data Interoperability Governance and Standards

Data interoperability also requires organizations to have robust data governance practices in place. This includes ensuring the data is accurate, consistent, and reliable and certifying that it is used ethically and in compliance with relevant regulations.

Data governance is essential for maintaining the integrity and interoperability of data, which is crucial to a company's ability to make effective decisions. Without strong data governance practices, organizations may end up with inaccurate or unreliable data, which can lead to poor

*“Having different systems, not having one source of information, or not having the correct information determines whether you can even use that data”*

**Nivedh Iyer**

Director and Head of Data Governance & Management,  
Grant Thornton

business decisions and negative consequences.

Another essential aspect of data interoperability is using standards, particularly in the financial services industry. Standards provide a

common way of representing and exchanging data, making it easier for different systems to understand and use that data.

“If we look at securities or trading of financial instruments, there are several market standards for security identifiers, but in certain areas, there is no standard identifier,” explains Mike Salk, Managing Director of Data Distribution and Media Solutions at Moody's Analytics.

“For example, in the leveraged loan markets, there's not a single standard identifier. We work with our customers to help them integrate our data into their environments. We provide them with data points that they can map into their databases and connect and match the information,” he adds.

Data interoperability standards and governance are necessary to effectively exchange data between different systems, applications, or platforms. These standards provide a common set of rules for exchanging data, while governance provides the framework for managing the process. By adopting both components, organizations can overcome data interoperability challenges and achieve a seamless data exchange. ■





## CHAPTER TWO

# Lack of Data Interoperability Setbacks and Security Issues

## KEY FINDING

*Data interoperability is essential to modern data management, enabling companies to exchange information seamlessly between different systems and technologies*

**W**ithout data interoperability, businesses risk losing their competitive advantage, incurring additional costs, and making poor business decisions.

One of the most significant risks of not having data interoperability is losing competitive advantage. In today's fast-paced and data-driven business environment, organizations must be able to access and analyze large amounts of data to make informed decisions. Without data interoperability, companies are limited in their ability to access and utilize data from different sources, which can limit their ability to innovate, respond to changing market conditions, and make informed decisions.

"If companies don't have data interoperability, they'll lack the competitive edge," says Nivedh Iyer, Director and Head of Data Governance & Management at Grant Thornton. "So, if they're not leveraging the best use of their data, then they're not tapping into the



entire customer journey and losing out on opportunities and to the competition that's out there," he adds.

In today's data-driven business environment, organizations must be able to access and analyze large amounts of data to make successful decisions for their businesses and remain competitive in the marketplace. As a result, data interoperability is a crucial aspect of modern data management.

"If companies cannot share data easily, they're going to miss out on opportunities to create more value and innovation," asserts Juan Gorricho, Head of Business Intelligence and Data Transformation at TD Bank. ▶

*"If companies cannot share data easily, they're going to miss out on opportunities to create more value and innovation."*

**Juan Gorricho**

Head of Business Intelligence and Data Transformation, TD Bank



Without data interoperability, companies also limit their ability to access and utilize data from different sources and collaborate with other organizations. This can lead to decreased efficiency, increased costs, and reputational damage, which can cause customer loss.

"After Covid hit, companies realized that just looking at their data was not enough," says Ben Dias, Director of Data Science and Analytics at easyJet.

"Companies can't predict what's going to happen based on their data because things are changing outside of the company. So that's where I think data interoperability will be even more important, with more companies sharing their data and wanting more data."

According to consulting company Accenture, businesses with "highly interoperable enterprise

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**Nivedh Iyer**

Director and Head of Data Governance & Management,  
Grant Thornton

applications" have a greater chance of achieving more robust financial performance and growth. Therefore, companies should aim to improve their interoperability by moving existing applications to the cloud and investing in "new, cloud-based enterprise applications" to connect data and experiences across applications, creating a standard version that all departments can follow or refer to.

Additionally, Accenture suggests focusing on collaboration, which interoperability can provide by allowing "functions and people" to work together toward a common goal. This could involve using real-time data, analytics, and AI, along with continually investing in the training and empowerment of talent across the organization, which can improve the productivity of employees who can easily use company data to produce valuable results.

### Costs and Quality Risks

The risk of not having data interoperability could also bring about increased costs. For example, if companies cannot effectively exchange data between systems, organizations must manually input and maintain data in multiple systems, leading to significant inefficiencies, data errors, and increased operational costs. In addition, without data interoperability, organizations cannot take advantage of the full potential of their data assets, as they are limited in their ability to integrate different data sources and applications to support decision-making. ►



"If a company acquires data, it is typically delivered in the source format, so that company will have to convert it and manipulate it to work in their environment, which is expensive, time-consuming and error-prone work," explains Mike Salk, Managing Director of Data Distribution and Media Solutions at Moody's Analytics. "But without that process, the data won't likely be useful," he adds.

In addition, data interoperability challenges can lead to reduced productivity. When data cannot be effectively shared between different systems, it can result in the inability to respond quickly to changing circumstances.

"If companies cannot share data easily, they're going to be missing out on opportunities to create more value and innovation," Gorricho emphasizes. "So, they need to have data interoperability to share data power; otherwise, they'll miss out on opportunities."

Poor data quality is another issue that can result from the lack of data interoperability, which can be particularly problematic. Organizations can risk exchanging inaccurate or incomplete data between systems,



leading to poor decision-making and business outcomes. This can also lead to a loss of customer trust and brand reputation, as well as increased operational costs from the need to correct the errors.

"If the domain pertains to risk management, lack of data interoperability can naturally limit the identification of depth and breadth of risks," says Kshitija Joshi, Vice President of Data Science at Nomura.

"If it pertains to pricing, it could fail to capture all the information that impacts prices. However, if the domain pertains to marketing, such as customer acquisition or cross-sell, upsell, and retention, the lack of data interoperability could limit the extent of accurate and most up-to-date information that the organizations can understand about their customers, particularly involving behavioural and psychographic attributes," he adds.

Therefore, the risk of poor data quality from not having interoperability can cause data duplication, errors, and conflicting information to the point where the data cannot be effectively shared between different systems. This can make it difficult for companies to trust the information being used.

"We find good quality data in large quantities hard to come by," reveals Janthana Kaenprakhamroy, CEO of Tapoly. "So, the biggest challenge is to get access to a variety of well-structured data that can be used for areas such as AI/ML development." ►

*"Companies can't predict what's going to happen based just on their data because things are changing outside of the company. That's where I think data interoperability will be even more important, with more companies sharing their data and more companies wanting more data."*

**Ben Dias**

Director of Data Science and Analytics, easyJet

## Security and Privacy Concerns

Lacking data interoperability can pose significant risks to both security and privacy, as it can impact the ability of different systems, applications, or devices to exchange and use data effectively and efficiently. One of the significant risks of lacking data interoperability is the vulnerability of the data during transfer.

When data is being transferred between different systems, it can be vulnerable to interception or alteration by unauthorized individuals, which can compromise the confidentiality and integrity of the data. This can result in sensitive information being exposed, leading to reputational damage, loss of trust, and potential legal and financial implications.

"Companies must figure out how to be able to make the data available or share it in a way that you don't risk running into privacy issues or security issues like hacking," asserts Gorricho. "It's definitely a challenge, and that's why an option is to use data

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CEO, Tapoly

marketplaces, which allow companies to put a lot of controls in what they share, for whom, and for how long."

Organizations, especially in the financial services industry, also need to comply with various privacy regulations, such as GDPR and the Payment Card Industry Data Security Standard (PCI-DSS), which set standards for data protection. If data cannot be effectively shared between different systems, ensuring compliance with these regulations can be challenging, which can increase the risk of fines.

In financial services, there is the issue of complex personal financial data," explains Joshi. "Data privacy combined with security, and particularly, being compliant with regulatory aspects, are additional challenges for this industry. However, the scale of regulatory compliance is comparatively much lower for consumer data in retail or e-commerce domains."

To prevent these risks, organizations must prioritize data interoperability and invest in solutions that enable secure data sharing and exchange. This includes implementing strong data security and privacy practices and investing in data management tools. By putting these elements in place, organizations can reduce the risk of data security and privacy breaches and ensure the protection of sensitive information.

"At Tapoly, we have data privacy and security policies that set out how we handle and safeguard our data," explains Janthana Kaenprakhamroy, CEO of Tapoly. "When it comes to larger organizations, a steering committee may be formed to review and oversee the data governance across functions," she adds. ■





## CHAPTER THREE

# The Future of Data Interoperability

## KEY FINDING

*The future of data interoperability may see more companies ensuring that data compatibility and interoperability are possible between different systems*

These standards will provide a common data format and structure that can be easily shared and used across other platforms. Financial services are expected to play a significant role in creating innovation and improving efficiency and customer experience.

"The future of interoperability in financial services includes the ability to create and enrich your dataset with another point of view, which will allow you to benefit your organization," asserts Juan Gorricho, Head of Business Intelligence and Data Transformation at TD Bank.

"If I can understand the purchase behavior in different industries of my clients, then I can use that data to enrich my data sets and actually create some benefits for my customers in making sure I offer them better products and better services," he adds

In addition, the growing need for real-time data exchange and the increasing demand for faster and more accurate financial transactions will also require seamless data interoperability between different systems. This will enable financial service companies to process

transactions more efficiently and reduce the risk of errors and delays.

"Within an organization, data interoperability is definitely the way forward," emphasizes Nivedh Iyer, Director and Head of Data Governance & Management at Grant Thornton.

"Several organizations are looking at this, particularly in the banking sector, but I'm also seeing a lot more uptake in the insurance sector. So, essentially, these organizations are looking at how they can leverage data and make the best use of it within the industry and cross-sector, between banks and insurance companies or between asset managers. So, interoperability is definitely something that is on trend these days." ►

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### AI/ML and Cloud-Based Technologies Influence on Data Interoperability

As artificial intelligence (AI) and machine learning (ML) become more widely used and sophisticated, they will play an essential role in data interoperability. These technologies will enable large amounts of data to be processed, which can quickly identify patterns and automatically translate data from one format to another. This will help overcome the

challenges of data compatibility and allow data to be more easily shared and used across different platforms and systems. However, AI's success is only as good as the data quality.

"AI benefits from two things: good quality data and variety in the data," Gorricho explains. "There's been a lot of conversations lately over the last few years about how big data is not necessarily what companies should aim for. It's more of, is my data quality data. The quality of the data

directly influences the quality of the AI/ machine learning, so it all depends on the accuracy of the data."

Financial services are increasingly using cloud-based technology to assist with data interoperability. This enables financial services organizations to store and access data from anywhere at any time. This also allows companies to create seamless data exchanges between different systems that can improve efficiency and reduce costs.

"Data interoperability is going to accelerate rapidly in the coming years, and you need to know your data and document the who, what, where, when, and how to reduce the data handling," asserts Mike Salk, Managing Director of Data Distribution and Media Solutions at Moody's Analytics.

"Cloud technology makes it much easier for firms to take a data set in from a partner and then replicate it from one database to another. So, it's really about knowing the data, reducing the handling, and working with partners you trust," he adds. ►

*"The potential of data interoperability is huge in the future, especially in financial services where the impact of initiatives such as open banking or interoperability in the digital payments space can have an enormous impact not just for the company but for the economy and society at large."*

**Kshitija Joshi**

Vice President of Data Science, Nomura

## Open Banking and Third-Party Providers' Benefits and Challenges

The rise of open banking is also expected to drive the future of data interoperability in financial services. Open banking enables financial services organizations to share customer data with third-party partners to offer new and innovative financial services

As a result, a key benefit of open banking is improved data interoperability, where in the past, it was difficult for customers to access their information or share it with third parties. Now, customers can access financial data directly from their banks, allowing banks to offer more customized financial services and increase their understanding of customer behavior.

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especially in financial services, where the impact of initiatives such as open banking or interoperability in the digital payments space can have an enormous impact not just for the company but for the economy and society at large,” reveals Kshitija Joshi, Vice President of Data Science at Nomura.

“For example, in India, the explosion of digital payments via the Unified Payment Interface

(UPI) developed by the National Payments Corporation of India (NPCI) can be attributed to data interoperability. This has helped in formalizing a large part of the economy by bringing large masses of un/under-banked population under the purview of the formal banking sector,” he adds.

However, the risk lies in ensuring that customer data is used ethically and in a manner that is in line with regulations and customer expectations. Both banks and third parties need to be transparent about how they intend to use customer data, and they need to have consent from their customers before accessing or using their data.

“In financial services, it depends on what data are protected and knowing how it's protected,” explains David Tabit, Managing Director and Global Head of Engineering at Moody's Analytics.

“Often, it is difficult to understand where and what data was used to create other data. There's not a lot of transparency, so there could be data that is protected being used in redistribution. Therefore, if you don't give proper attribution back to where it came from, there is definitely a danger in that.” ■





# Key Takeaways

## 1 Data interoperability is crucial for the seamless exchange of data

Data interoperability is critical for the successful functioning of the financial services industry, enabling financial institutions to exchange and use data consistently and securely. This is important not only for technical reasons but also for business reasons. Companies can benefit from improved data quality, accuracy, and efficiency, allowing them to gain new insights into their industry.

## 2 Lacking data interoperability can cause a loss of competitive advantage

One of the most significant risks of not having data interoperability is losing competitive advantage. In today's digital landscape, organizations need to be able to access and analyze large amounts of data to make informed business decisions and understand the preferences and needs of their customers.

## 3 AI/ML and Cloud-Based Technologies will have a substantial impact on data interoperability

The increasing use of AI/ ML and cloud-based technologies will play an essential role in data interoperability. They will enable large amounts of data to be processed, which can quickly identify patterns and automatically translate data from one format to another. In addition, these technologies will overcome such challenges as data compatibility and allow data to be more easily shared and used across different platforms and systems.





## Conclusion

**D**ata interoperability has become increasingly significant for companies to implement in the digital age. Many businesses can now access, process, and share data, which is essential to stay competitive. It also ensures continuous data exchange, operational efficiency and improved decision-making processes.

The financial services industry relies on data to manage risks, make investment decisions, and comply with regulatory requirements. Data interoperability can help these financial institutions by enabling them to access and use data from multiple sources, leading to better business decisions, enhanced customer experiences, and customized products and services.

While the financial services industry continues to progress, data interoperability will become even more critical. As a result, financial institutions must invest in the necessary technologies to certify a smooth data exchange. With this in mind, companies need to take advantage of what data interoperability offers to stay competitive and keep up with the constantly evolving digital age. ■



## About Moody's Analytics

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Moody's Analytics provides financial intelligence and analytical tools to help business leaders make better, faster decisions. Our deep risk expertise, expansive information resources, and innovative application of technology help our clients confidently navigate an evolving marketplace. We are known for our industry-leading and award-winning solutions, made up of research, data, software, and professional services, assembled to deliver a seamless customer experience.

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# MOODY'S

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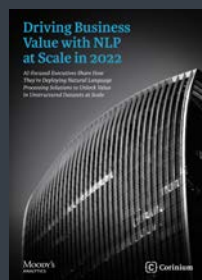
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